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CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

AN ADDRESS on Sleep, Sleeplessness, and Sleepiness. By Sir FREDERICK MOTT, K.B.E., F.R.S., M.D. .. 1161

ORIGINAL ARTICLES.

The Use of Suction in Surgery. By NORMAN C. LAKE, M.D., F.R.C.S. —(*Illustrated*) 1166
Intubation of the Common Bile-duct for Stricture. By V. ZACHARY COPE, M.D. 1169
Fibrocystic Disease of Bone: Notes on the Pathology of Two Cases. By J. B. G. MUIR, M.B., F.R.C.S.—(*Illustrated*) . 1170
A Case of Osteitis Fibrosa. By H. W. SOUTHGATE, M.B., B.S.—(*Illustrated*) 1172
Inherited Syphilis and Tuberculosis. By W. T. MUNRO, M.D., D.P.H. . 1173

MEDICAL SOCIETIES.

Royal Society of Medicine: Section of Comparative Medicine: Puerperal Septicæmia in Cattle .. 1176
Medical Society for the Study of Venereal Diseases: Exhibition of Cases and Specimens .. 1177
Edinburgh Medico-Chirurgical Society: Exhibition of Cases and Specimens 1178
Royal Academy of Medicine in Ireland: Section of Medicine: Encephalitis Lethargica 1180

REVIEWS AND NOTICES OF BOOKS.

The Nervous Patient. By Millais Culpin, M.D., F.R.C.S. 1181
Artificial Sunlight and Its Therapeutic Uses. By Francis Howard Humphris, M.D., F.R.C.P. 1182
A Text-book of Histology. By Prof. Harvey Ernest Jordan, A.M., Ph.D. .. 1182
Zur Einführung in die Insulintherapie des Diabetes Mellitus. Von H. Staub 1182
A Text-book of Physiology. By Prof. H. E. Roaf, M.D. 1182
Individual Psychology. By Alfred Adler (Vienna). Translated by P. Radin, Ph.D. 1182
Colonic Therapy in the Treatment of Disease. By O. Boto Schellberg. 1183
Traité élémentaire de clinique thérapeutique. By Dr. Gaston Lyon .. 1183
Dislocations and Joint Fractures. By Frederick Cotton, A.M., F.A.C.S. 1183
Journal of Physiology 1183

LEADING ARTICLES.

LICENSED HOUSES 1185
THE VALUE OF THE REFLEXES IN DIAGNOSIS 1186
MODERN ENGLISH 1187

ANNOTATIONS.

Regulations Governing Food Products..... 1187
Pasteur 1188
Diabetic Coma Without Ketonuria..... 1188
Anæsthetics in Animal Operations 1188
Cataract in Dystrophic Myotonia 1189
Bismuth Treatment of Syphilis..... 1189
Schistosomiasis in Natal.. 1189
Intra-Uterine Ovarian Grafts 1190
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The Medical Directory, 1925 1190

MODERN TECHNIQUE IN TREATMENT.

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XCIX.—The Treatment of Vertigo. By Prof. ALBERT RAMSBOTTOM, M.D. 1191

THE SERVICES.

Royal Army Medical College.—Royal Army Medical Corps.—Royal Air Force.—Deaths in the Services 1198

SPECIAL ARTICLES.

Medicine and the Law: Stopes *v.* Sutherland: House of Lords' Decision.—The Misuse of Prescriptions. — An Error in Dispensing.... 1192
Royal Society of Medicine: The Annual Dinner.... 1194
Scotland: Measles and Whooping-cough in Edinburgh 1195
Ireland: The Local Government Bill 1196
Berlin: The Hadwen Case from the German Standpoint 1197
Infectious Diseases Abroad 1198

PUBLIC HEALTH SERVICES.

Reports of Medical Officers of Health: Birmingham.—Sheffield.—Leeds.—Bradford 1199
Infectious Disease in England and Wales ... 1201

THE GENERAL MEDICAL COUNCIL.

Penal Cases. — Erasures from the Dental Register.—Reports Submitted.—Broadcasting. —The Direct Representatives to the Council 1201

CORRESPONDENCE.

General Medical Council Election 1206
The Influence of the Vagus Centre in Chloroform Narcosis (Prof. D. T. Barry)..... 1206
Laboratory Changes at a Hospital (Mr. H. W. Burleigh) 1206
The Effect of Splenectomy on the Production of Experimental Purpura (Dr. G. A. Sutherland). 1207
The Alleged Sterility of Present-day Bacteriology (Dr. James Young) 1207
The Clinical Significance of Constipation (Dr. E. G. March) 1207
Pathology of Nephritis (Dr. S. C. Dyke)..... 1208
"A Disclaimer" (Mr. J. T. Ainslie Walker, Dr. A. Knyvett Gordon) 1208
Insufflation of the Fallopian Tubes (Prof. W. Blair Bell) 1208
Pituitary Whole Gland in Constipation (Dr. J. W. Tomb) 1208
Intra-ocular Tension in Myopia (Dr. F. W. Edridge-Green) 1209
Queen Alexandra 1216
Obstinate Constipation (Drs. R. C. Bennett, and C. Lundie) 1216
Teaching on Contraception 1216

OBITUARY.

Robert James Lee, M.D.. 1209

MEDICAL NEWS.

University of London.... 1209
University of Edinburgh. 1210
David Lewis Epileptic Colony 1165
London Association of the Medical Women's Federation 1192
Royal Commission on National Health Insurance..... 1198
Royal Medical Benevolent Fund 1201
Sir Malcolm Morris Memorial Fund 1205
Old Epsomian Club 1210
Royal Sanitary Institute: Henry Saxon Snell Prize 1210
Manchester Hospital Sunday Fund..... 1210
University of Liverpool . 1210
Donations and Bequests.. 1210
Colonial Medical Council at Cape Town 1210

NOTES, COMMENTS, AND ABSTRACTS.

The Value of the Reflexes in Diagnosis. By J. S. RISIEN RUSSELL, M.D., F.R.C.P. 1213
Colonial Health Reports: Hong-Kong.—St. Vincent.—Turks and Caicos Islands.—Nigeria.—Leeward Islands.—St. Helena... 1214
A Warning..... 1216

Medical Diary 1210
Appointments 1212
Vacancies 1212
Births, Marriages, Deaths 1212

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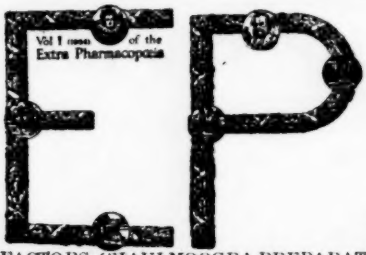

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ON

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In sleep there is a cessation or partial cessation in the flow of the stream of consciousness. Now what do I mean by the stream of consciousness? Flowing into it continuously by all the sensory avenues are stimuli producing a sensory-motor continuum. For every sensation tends to activation by muscular contraction, and reviviscence of past sensations by association percepts or images. We may group sensations into two great classes: External and Internal.

1. The *External* or *Exteroceptor* are (1) the distance receptors: sight, hearing, and smell; (2) contact receptors: taste, touch, pain, heat, and cold; (3) gravitation. These form together a subjective feeling continuum which may be termed exæsthesia.

2. *Interoceptor.*—Seeing that every sensation and every mental image or engram leads to a reflex activation which may be apparent or not according to the influence of positive or negative inhibition; to every sensation and image or perception there must, in consequence of this reflex motor action, result a corresponding kinæsthetic or postural excitation of afferent stimuli flowing along proprioceptive neuronic systems from muscle spindles, tendons, bones, and joints which, combined with associated labyrinthine sensations, form a sensory continuum which is intimately integrated with the exteroceptor sensory continuum on the one hand and the motor continuum on the other. This proprioceptive-labyrinthine continuum forms the less conscious but quite as important framework—the warp upon which the exteroceptor continuum, the woof, is woven. The two are inseparable, and the kinæsthetic and postural alterations in this sensory continuum, although playing apparently a subordinate part in the field of consciousness, really are most important in reviviscence of memory images or engrams. But under interoceptor stimuli we have to consider also those which form a continuum that minister to the vegetative functions or organic needs of the body. These are characterised by low intensity in normal conditions, and it is only when these stimuli rise above or below the normal intensity, or vary in their normal phasic rhythm or periodicity, that we become aware of their existence by their entry into the stream of consciousness. This state of feeling is termed cœnæsthesia.

The interoceptor and exteroceptor stimuli are integrated and constitute the subjective personality or ego. The sensation complexes or, if you like, excitation complexes, to use a synonym, form a continuous conscious and subconscious series which tends to reviviscence of a series of past experiences either in the form of concrete images or engrams or of abstract symbolic verbal images or engrams. The stream of consciousness is largely made up, in civilised people, of a continuous flow of engrams or images of verbal symbols forming concepts (silent language). Every fresh excitation exteroceptor or interoceptor arouses usually the equivalent word symbol. Abstract thought depending as it does upon language is only acquired by imitation. For, hearing no language we should speak no language, and in the uneducated deaf-mute, and to a less degree the primitive savage, the stream of consciousness is largely made up of a succession of sensation complexes and revived images or engrams of concrete objects and their associations in time and place.

The more highly cultured a man, the more does his mental furniture depend upon word symbols. It is an interesting question whether these word symbols constituting silent thought can be revived in the complete absence of exteroceptor stimuli. When we lie awake at night and external stimuli of sound and light are greatly diminished, so that the principal external tributaries to the stream of consciousness are almost dry, there often arises a flow of ideas; apparently the stream of consciousness is swollen and overfull with the flood of ideas. The lamp of attention is compelled to chase this succession of ideas made up of reminiscences of past experiences, or of creative imagination, which usually is of the nature of fantasy, more rarely of useful invention. This flow of ideas is a condition between sleeping and waking and is termed the hypnagogic state. There is partial consciousness; the inability to check this flow of ideas is due to failure of the highest inhibitory level of the cortex, owing to acquired or innate conditions leading to exhaustion as in neurasthenia, or the effects of a toxin as exemplified by the delirium of fever.

As a result of failure of function of this evolutionally and developmentally highest level there is a facilitation of associational ideation. This weakening or failure of inhibition prevents volition and choice of thought. It might be asked, would this stream of consciousness, which we may term endoæsthesia as distinctive from exoæsthesia and cœnæsthesia, flow in the complete absence of exteroceptor stimuli? Physiologists quote a case of Strumpell's of a woman who had lesions in the mid-brain and base of the brain, which deprived her of all sensibility except the sight of the left eye and hearing of the right ear. If the ear was plugged with wax and the eye closed the patient became unconscious and fell asleep.

We know also that consciousness depends upon a constant supply of arterial blood, for Mosso the physiologist made this experiment upon a man who in consequence of an injury to the skull had the brain exposed so that pulsation could be felt in it. When he compressed the carotid arteries the pulsation stopped, the man was told to count, and invariably when six seconds had elapsed the man lost consciousness. It was restored upon return of pulsation. There was dissociation of the ganglion cells of the cortex at their synapses—at least that seems the most probable explanation. This dissociation may be due to an alteration of surface tension at the multiple points of contact in consequence of deprivation of oxygen. Seeing that the lower subcortical centres can continue functioning a much longer time than six seconds when deprived of blood, it follows that the ganglion cells in the highest level of the cortex are more easily exhausted.

Physiological Experiments.

Many physiological experiments have been performed with the object of seeing the changes which take place in the brain during sleep. Arthur Durham trephined animals and placed a watch-glass in the aperture, and he found the blood in the vessels is diminished in amount and does not move so rapidly. He also noted that whatever increases the cerebral circulation tends to wakefulness. Dr. William Hammond and Dr. Silas Weir Mitchell repeated Durham's experiments and obtained the same results.

Dr. Angelo Mosso made observations upon three patients who had lost a portion of the cranial vault, and in whom there was a soft pulsating cicatrix. He found that during sleep there is a less amount of blood circulating in the brain, and at the same time an increased amount in the extremities. He showed further by the aid of the plethysmograph that there are frequent adjustments in the circulation during sleep. Thus a strong stimulus to the skin but not enough to waken the sleeper caused a contraction of the blood-vessels of the forearm, a general rise of blood pressure, and a determination of blood towards the brain; and, on the other hand, upon suddenly awakening the sleeper, there was a contraction of the vessels of the brain and an accelerated flow of blood through the hemispheres. The whole organism is so sensitive during sleep that a loud sound, light, a touch, or any moderate sensory impression modified the respiratory rhythm, determined a contraction of the vessels of the forearm, increased the blood pressure, caused an increased flow to the brain, and quickened the beats of the heart.

These experiments are in agreement with the observations of other physiologists, Donder, Kussmaul, Turner, and others. It is, therefore, probable that during sleep there is a partial anæmia of the brain, and that the blood is determined away to other organs and tissues, whilst at the same time this partial deprivation of blood may be modified by changes in the circulatory or respiratory mechanism caused by sensory impressions, or by sudden changes in position, or the state of response of the muscles. Examination of the retina during sleep shows a partial anæmia as compared with the waking state. Several other theories of sleep besides cortical anæmia have been put forward, one was that the pituitary gland pours out a secretion into the brain that causes sleep; another that it is a vegetative function of the body the highest controlling centre of which is in the hypothalamic region. This view will be considered later when dealing with lethargic encephalitis. Then there is the theory of Mathias Duval that sleep is due to dissociation of the cortical ganglion cells by retraction of the terminal gemmules of the dendrites or of the terminals of the axons by a process allied to amœboid movement.

But these physiological investigations, however, have never furnished a quite satisfactory explanation of the series of events which lead up to sleep, and there is much to be said in favour of a biological explanation. Throughout organic nature there has been an association between functional activity and sunlight. Throughout the animal kingdom oxidation processes are fundamental to tissue activity and discharge of energy under the influence of stimuli from the external world, resulting in the production of fatigue products and a degree of exhaustion of potential energy which is capable of recuperation by rest. The normal conditions of sunlight and oxidation processes have been habitually juxtaposed in the evolution of the animal kingdom. While at the end of the day till dawn there is a lowering of oxidation processes in response to absence of environmental stimuli, there is a storage of potential energy. The fall in potential energy at the end of the day has in the long procession of ages been associated with a desire for sleep. This manifests itself especially by an inability to keep the eyes open, and there is a feeling of fatigue in the elevators of the eyelids which tend continually to droop and shut out the light. R. Semon has shown that habit and memory are based upon the same fundamental principles. When two conditions are juxtaposed in time and place either one will revive the other. Thus, if we represent C as sleep, A as night, B fall of potential energy and fatigue, sleep is induced habitually by either A or B. Probably B is the more important factor in determining the desire for sleep. Consequently, when persons have to work by night and sleep in the daytime, they experience a fall of potential energy at the dawn and a desire for sleep in the day.

According to Claparide we must look upon sleepiness as occurring not because there is an actual exhaustion of the brain, but in order that it may not be reduced to that extremity. Every normal child, like the adult but in a less degree, possesses a store of nervous and muscular energy over and above that which it requires in ordinary conditions of life; and this statement is borne out by all the known facts, experimental and otherwise, concerning mental and bodily fatigue. The reserve energy certainly varies in amount in different individuals; it is intended only for emergencies and should not be habitually drawn upon. The sense of fatigue and the desire for sleep may be regarded as the protective and the instinctive guardians of this reserve of nervous energy. Both give warning that the reserve is about to be drawn upon, and if the warning is continually allowed to pass unheeded, exhaustion of the highest inhibitory function of the brain cortex ensues, and associative memory, thus left unchecked, permits a continuous flow of ideas, resulting in mental excitement and sleeplessness. A vicious circle tends thus to become installed which, if not broken, leads to bankruptcy of nervous potential, with permanent mental irritability and lack of mental energy.

THE ADVENT OF SLEEP.

Drowsiness and somnolence are induced by many external conditions of the body even during the daytime, for example, a heavy meal at mid-day with alcoholic beverages. It is a mistake to think that alcohol acts directly as a stimulant—its action is narcotic, but it produces an apparent stimulating effect by its narcotising action on the highest level of the brain, viz., inhibitory control, and if the environmental conditions are not acting as an exciting cause, loosening association and flow of ideas, then alcohol

acts as a narcotic and produced somnolence, drowsiness, and sleep. Even a heavy meal with alcohol tends to drowsiness, blood is derived away from the brain. A hot, stuffy atmosphere in which there is excess of CO_2 assisted by an uninteresting discourse or lecture delivered with a monotonous tone and rhythm induces somnolence. One tries to keep one's eyes open and the head up and to attend, but in spite of conscious effort the eyelids droop or close, the jaw drops, and the head falls forward on the chest or lateral-wards or backwards. We may become partially conscious, or partly conscious if something happens to vary the monotonous drone, and light up again the lamp of attention and awareness. Is this sleep a sort of protective vital reaction, the first signs of which are those connected with the tonic contraction of head and eye muscles due to failure of proprioceptive kinæsthetic and postural stimuli that tell of spatial relation regarding our own position in the three dimensions of space, and relation to objects in the world around? The drooping of the eyelid and closure to the light stimulus, combined with relaxation of the head and neck muscles which extend to the rest of the skeletal muscles, is probably due to the lowering of the labyrinthine stimuli which tell us of the position of the head in the three dimensions of space, and also have a marked influence upon the tone of all the muscles of the body as well as the head and neck. Now, the eye muscles and the head and neck muscles are associated in their action and the successive series of proprioceptive postural and kinæsthetic stimuli arising from them, lead to our consciousness of environmental happenings in the three dimensions of space. The upward and downward movements of the eyes are related to vertical space, the lateral movements to horizontal space, and convergence, associated with accommodation by the ciliary muscle, to depth. There is an intimate association of the ocular nuclei and the vestibular nuclei by the posterior longitudinal bundle. Failure of the proprioceptive stimuli from the head and eye muscles would produce a loss of the principal element of consciousness—viz., the spatial relations of the individual to the world around. If, then, there is a part of the brain which has control over this elemental function of consciousness, common to all animals, it will be by its inhibitory influence, primarily on the tonus of muscles of the head and neck and eyes. The proprioceptive and labyrinthine stimuli of sufficient intensity to maintain the eyes open, and the lower jaw and head up against the force of gravity, would eliminate the principal tributary to the stream of consciousness. The cessation of this tributary to the stream of consciousness may be regarded as a device of Nature to put the body in the best position for unconscious quiet of the mind and bodily rest, viz., the prone position when other important sources of anti-gravity stimulus are removed. Sherrington has shown in the Linacre Lecture, "Problems of Muscular Receptivity," that the stimulus which is the source of reflex standing is one acting on the receptors of those limb muscles which are themselves executants of posture. They are those which keep the head and neck from sinking, the trunk straightened, and the spine supported, the limbs from yielding and folding under the superimposed weight of the body. He showed in the decerebrate animal the postural act of standing can take place with the skin nerves divided. Now, in the "knock-out blow" on the point of the chin the man falls down and is unable to rise in the allotted ten seconds, and he is unconscious, or only semi-conscious, for seconds. What has happened to cause this annihilation of the reflex standing postural condition? Shock to the semicircular canals transmitted through the articulations of the lower and upper jaw, causing a loss of tonus in all the muscles of the body. Dr. Golla long ago showed that a person placed in the rotating chair, owing to labyrinthine disturbances loses his knowledge of spatial relations and may even fall off the chair unconscious. These neuronic systems connected with proprioceptive ocular and labyrinthine functions exist in the mesencephalon and pons where inflammatory changes are especially met with in encephalitis. May not the lethargic condition met with in this disease be due to their failure to function properly?

During natural sleep, however, the whole central nervous system is resting, indeed, the vital biochemical katabolic processes of the whole body are lowered, for there is less oxygen used, less carbonic acid produced, and less heat. Goltz's dog that lived for a year, after the whole of his cerebral cortex had been removed, slept. There are various degrees and varieties of unconsciousness; they are: (1) light sleep; (2) sleep disturbed by dreams; (3) sound sleep—but not so sound that the individual cannot be aroused; (4) coma, a deep sleep from which the patient cannot be aroused; but I do not intend to say anything about this last condition.

DREAMS.

Sleep disturbed by dreams is unrefreshing, especially if the dreams are terrifying. Kant said:—

> "I rather suppose that ideas in sleep may be clearer and broader than even the clearest in the waking state, for man at such times is not sensible of his body. When he wakes up his body is not associated with the ideas of sleep, so that it cannot be a means of recalling this former state of thought to consciousness in such a way as to make it appear to belong to one and the same person."

So that a neurasthenic who says that he does not dream, yet wakes up unrefreshed by sleep, probably has been dreaming and actively using up neural energy. Dreaming can be accounted for in many instances by external excitation, as the following experiments related by Verwoorn show: a man who was asleep dreamt he heard the firing of guns when small pebbles were thrown against the window-pane. Another, who, when asleep, was sprinkled with a few drops of water, dreamt of storm and rain. Again, another who had placed under his nose a perfume that he had brought from Egypt, dreamt that he was in the bazaar at Cairo and entered the shop where he bought the perfume. When I had fever (? typhoid or influenza) I had two dreams which illustrate this peripheral excitation in the production of terrifying dreams with a great magnification of the effect of the excitation, probably due to the loss of inhibition through the toxin on the highest level of the cortex. I had a pretty marked pharyngeal and nasal catarrh. I dreamt that my nose was swelling inordinately until it became an elephant's trunk, and then in my delirium I saw hundreds of trunks. Another dream was even more terrifying, and owed its origin to a peripheral cause. The country practitioner who attended me gave me a big dose of antifebrin to bring down the temperature; it fell rapidly from over 104° to subnormal. I dreamt I was a prone marble statue undergoing liquefaction. I awoke cold and bathed in perspiration, and for some few moments I hardly realised I was alive and I was unable to move or shout for help. Everyone knows how an indigestible supper will produce nightmare. Is it not told in the "Ingoldsby Legends" about the young man "who had something on his chest, Mother," and with the conclusion it was "that confounded cucumber I've eat and can't digest, Mother." The war taught us how true was the philosophy of Lucretius, who, in "De Rerum Natura" says:—

> "And generally, to whatever pursuit a man is closely tied down and strongly attached, on whatever subject we have previously much dwelt, the mind having been put to a more than usual strain in it; during sleep we for the most part fancy that we are engaged in the same; lawyers think that they plead causes and even draw up covenants of sale, generals that they fight and engage in battle, sailors that they wage and carry on war with the winds. We think that we pursue our task and consign it when discovered to writings in our own native tongue. So all other arts and pursuits are seen for the most part during sleep to occupy and mock the minds of men."

Lucretius next calls attention to the evidence of dreams in animals:—

> "And often during soft repose the dogs of hunters do yet all at once throw about their legs and suddenly utter cries and repeatedly sniff the air with their nostrils as though they had found and were on the tracks of wild beasts."

In another passage Lucretius says:—

"Again the minds of men which pursue great aims under *great emotions* often during sleep pursue and carry on the same in like manner; kings take by storm, are taken, join battle, raise a loud cry as if stabbed on the spot."

In Shakespeare there are two passages which may have had their source of inspiration in the "De Rerum Natura" of Lucretius—viz., the speech regarding Queen Mab by Mercutio and that of Lady Percy to Hotspur. As Lucretius says, a man dreams of whatever pursuit he is closely tied down to; during the Great War the soldier dreamt that he was in the trenches fighting Germans, or he heard and saw the shells bursting, shouted in his sleep, and awoke with a start. How truly Shakespeare describes this when he says:

"Sometimes she [Queen Mab] driveth o'er a soldier's neck,
And then dreams he of cutting foreign throats,
Of breaches, ambuscadoes, Spanish blades,
Of healths five fathoms deep; and then anon
Drums in his ear; at which he starts and wakes,
And, being thus frighted, swears a prayer or two
And sleeps again....."

(In the quarto 1597 edition the text had "mines and countermines" instead of "Spanish blades," which seems singularly appropriate just now.)

In Lady Percy's speech to Hotspur there is the following passage:—

"Why hast thou lost the fresh blood in thy cheeks;
And given my treasures and my rights of thee[1]
To thick-eyed musing and cursed melancholy?
In thy faint slumbers I by thee have watch'd
And heard thee murmur tales of iron wars:
Speak terms of manage to thy bounding steed,
Cry, 'Courage! to the field!' And then hast talk'd
Of sallies and retires; of trenches, tents."

My experience accorded with this statement of Mr. Curdy. Numbers of officers and men admitted to the Neurological Clearing Hospital suffering with anxiety neuroses, contemplation and fear, had lost sexual desire.

The war also taught us that sleep disturbed by terrifying dreams was associated with disorder of the endocrine system of glands, manifested by signs of Graves's disease and high blood pressure, which disappeared when the terrifying dreams ceased. Freud has emphasised the importance of the analysis of dreams in ascertaining the existence of a repressed fear complex. According to my war experience too much stress was laid by Freud and his followers on fear complexes related to sex functions, although the great importance of these must be recognised and cannot be disregarded in relation to causation of the psychoneuroses, but it is not my intention to discuss this question further.

LETHARGY CAUSED BY DISEASE.

The cause of the drowsy condition, somnolence, and lethargy met with in certain diseases of the brain—e.g., lethargic encephalitis, sleeping sickness due to trypanosomiasis—has aroused a new interest in the question whether sleep is not a vegetative function which has a functional representation in the central nervous system in a situation where the regulation of metabolism exists. In sleeping sickness there is a perivascular lymphocyte infiltration affecting not only the cortex but especially the medulla, mid-brain, and basal ganglia. I always thought that the lethargy and the weakness and ready fatigability by which a patient would become drowsy and somnolent after a few minutes' conversation was due to a failure of oxygen-supply to the cortex by the stasis of blood and cerebro-spinal fluid. Whereas, in lethargic encephalitis it is the mesencephalon, the pons, medulla, and the basal ganglia which are especially affected, in general paresis, when the cortex, and not these structures, is involved, you do not get this lethargic condition. I have already suggested a reason for sleepiness by lesions of the pons and mid-brain interfering with ocular proprioceptive and labyrinthine stimuli, which are essential for consciousness of spatial relations of the world around.

Various authors have put forward other views regarding the lethargy of encephalitis. For example, Buzzard thought it might be due to intraventricular pressure of accumulated cerebro-spinal fluid owing to the œdema of the mesencephalon interfering with the flow of fluid from the lateral ventricles through the aqueduct of Sylvius; interruption of sensory impulses to the thalamus (Gayet); disturbance of the muscle tonus (Marinesco), and to some extent also of endocrine secretion; but against this there is no evidence of any affection of thyroid or suprarenal glands. Whether the pituitary is affected or not I do not know. Van Economo postulates the theory of a sleep centre in the neighbourhood of the oculo-motor nuclei.

According to Prof. Wimmer the symptoms belonging to the "hypophysis syndrome," such as adiposity or cachexia, polyuria, polydipsia, glycosuria, and morbid changes in the sexual organs and in their functions, constitute the main features of vegetative disturbances in chronic encephalitis. But a number of clinico-anatomical and experimental investigations have, however, unsettled our views as to these hypophysis syndromes. For the experiments of Roussy and Camus have shown that in the basal grey matter of the brain just above the hypophysis—hypothalamus, the tuber cinereum, and infundibulum—there is a series of vegetative centres (cerebral control of sympathetic), and a lesion here, although the pituitary body is not touched, may give rise to hypophyseal symptoms—viz., an adiposo-genital syndrome, polysarcia, atrophy of testes, apathy, somnolence, and occasionally diabetes insipidus.

INSOMNIA.

Insomnia is a troublesome symptom occurring in most acute and chronic diseases or illnesses. It may be due to pain, to irritating cough, fever, cerebral excitement arising from toxic delirium, organic brain disease, anxiety neuroses, psychoneuroses, and psychoses. A prevalent form of insomnia for which one is frequently consulted, and to which I will particularly call attention, is a condition found especially in modern urban life and may almost be regarded in itself as a malady. It is a powerful factor or contributory cause in the production of neurasthenia and of a nervous breakdown usually said to be due to overwork, but it is not so much overwork as anxiety, worry, and mental conflict, or a repressed fear complex, the nature of which may be revealed to the sympathetic physician who is able to gain their confidence.

Charles Darwin in his "Life and Letters" refers to his father, who was a physician at Shrewsbury, as the wisest man he ever knew. He was known as the "father confessor," for numbers of patients came to him suffering from what they believed to be bodily diseases but which were really due to fears, which he was able, by a sympathetic understanding and wisdom, to dispel from their minds or help them to fight against. I always ask my patients: "Have you any financial worry? Have you any domestic worry? Have you any cause of anxiety?" And I explain to them that it is worry and not overwork in most cases that causes insomnia, and that as soon as sleeplessness becomes habitual trifling troubles are magnified and cause depression. Where there is a latent innate potential cause of the psychosis these conditions of worry and anxiety producing insomnia are apt to set up delusions of a persecutory nature. Hence the necessity of taking early measures to prevent habitual insomnia, even if one has to start with drugs. But the great and important matter is to endeavour to restore as soon as possible the habit of normal sleep. To do this you have to find out what the daily life of your patient has been, what are his real anxieties, and how they can be alleviated. He may

[1] Mr. Curdy, in discussing the Anxiety Neuroses of Soldiers, said: "The man who is visited by his wife or his sweetheart is a disappointment both to himself and his visitor in that it is impossible for him to give any proof of his affection. This finds expression in a manifestly obvious way through the symptoms of impotence, which, is so far as I have been able to learn, universally present in the anxiety state, either as such, or in the form of its equivalent lack of erotic feeling."—"War Neuroses," Psychiatric Bulletin of New York, July, 1917.

suffer with dreams which may be a clue to the fear complex which is the hidden cause of his psycho-neurosis. What should we do for such a neurasthenic patient? The first thing is to make a thorough physical examination. For so many of these patients have functional derangements of a distressful nature which lead them to believe they are suffering from a bodily disease—for example, they believe they are impotent; they have heart disease; gastric disease; or an organic disease of the nervous system; or that they will become insane. They liken their symptoms to some friend who has recently died of tumour of the brain or general paralysis. Be cheerful and look cheerful, and assure them that, having made a careful physical examination, you are sure that there is no organic disease and no probability of it arising. These neurasthenic people, men and women, are eminently open to suggestion, and you will inspire hope by being cheerful to them. They complain of weariness, inability to concentrate, failure of memory, of being easily fatigued; they suffer with indigestion and constipation. Explain to them that these are only signs of lack of nervous energy flowing to the voluntary and involuntary muscles, due partly to the insomnia, and that with the restoration of natural sleep habit all these signs and symptoms which have alarmed them will disappear. Inquire into their domestic, financial, and occupational capacities to carry out your suggestions, for you will only increase anxieties if you propose impossible conditions of treatment. Sunlight, fresh air, and occupation with interest in the open air—for example, golf—should be recommended: the value of this game to the business and professional man is that he cannot introspect, he must make a continual series of fresh mental adjustments; he is taking moderate exercise in the open air, takes his own time and does as much or as little as he feels inclined. Walking, motoring, and fishing are not so good because they do not break the train of anxious thought. I am often asked "Ought I to sleep after lunch?"—I say sleep is a protective instinct, and to yield to the desire is natural even if it comes at an unnatural time. Attention should be directed also to all those conditions of comfort and quiet which facilitate sleep and which you all from experience know.

TREATMENT BY DRUGS.

Pain is best relieved by morphine, either hypodermically combined with atropine, or by mouth. In some cases morphia combined with hyoscine (¼ gr. of the former to 1/200th or 1/100th gr. of the latter); for the lightning pains of tabes, veronal and aspirin may be given, but pyramidon (5 to 8 gr.) is more effective. For sleeplessness due to tooth-ache and trigeminal neuralgia, I have found useful croton-chloral-hydrate (5 to 10 gr.), with tincture of gelsemium (ℳ5 to 15), repeated in four hours if no relief. Veramon 6–15 gr., according to the severity of the pain, has been recently recommended.

Hypnotics employed for insomnia are numerous.

"*General Requirements for Insomnia.*—1. They shall produce sleep of sufficient depth without secondary action, especially on respiration and circulation. Those which contain Cl are more depressant on respiration or circulation. 2. Sleep shall be quickly induced—e.g., within half an hour. This depends upon the ease with which they are dissolved and absorbed. Tabloids or tablets should always be crushed—otherwise give powder in cachets. 3. The action should be of sufficient duration—viz., six to eight hours. 4. Rapid and complete excretion or conversion into a harmless product; otherwise there will be a tendency to accumulative effects. 5. Prolonged use of same drug should be avoided for two reasons: first, because of cumulative effect and tolerance requiring increased dosage; second, habit formation."[1]

If sleeplessness has its origin in mental strain and unrest, anxiety, mental conflict, or psychic causes, chloral hydrate or some other hypnotic of the fatty series—viz., paraldehyde, chloretone, chloralamide, or the coal-tar derivatives—e.g., sulphonal, trional, or one of the barbituric acid series: veronal, dial, luminal, bromural, dormiol, adalin may be employed. The great advantage these drugs have over morphine is they do not cause constipation, and the danger of becoming habituated to them is less. The action of chloral hydrate is similar to chloroform but more lasting. Sleep is quiet and deep, often accompanied by dreams: dose 10 to 20 gr. This drug is often combined with an equal quantity of a bromide salt, and in mental cases with equal quantity of bromide together with cannabis indica and hyoscyamine. In cases where there is an idiosyncrasy, chloral is liable to produce urticaria, erythema, and other skin eruptions. For ordinary sleeplessness chloral and veronal, or its sodium salt medinal, are frequently used as good remedies in the delirium of fever—for example, typhoid, where, owing to its action on the heart, chloral had better not be used, nor in cases where heart and lung diseases exist. Chloralamide, 1·5 g. equal 1 gr. of chloral, is a useful drug. Adalin is a hypnotic of moderate strength, often acting well; it has the advantage of being quickly eliminated. Bromural is a hypnotic and sedative, weak in action, but has very little toxicity; 5–10 gr. in tablets is the dose. Paraldehyde, if it were not for its unpleasant taste and the odour of the breath afterwards would be more extensively used. It is safer than chloral because there is no action on the heart or respiration; 1–2 drachms or more may be given in cases of typhoid fever and cardiac diseases. It is especially useful in mental diseases where prolonged use of hypnotics may be necessary. It may be given with 5–10 gr. of veronal, medinal, or trional to prolong the sleep. Dormiol is a combination of amylene and chloral. It is recommended on account of its rapid action and is in most cases reliable. It is given in capsules 8–15 gr. Veronal, diethyl-barbituric acid, is apt to be cumulative like sulphonal, and should not be given for more than a week. Luminal belongs to the barbituric acid series, but the ethyl group C_2H_5 is replaced by C_6H_5, phenyl ethyl. It is especially suitable for cases of sleeplessness where the disease takes the form of night attacks. It is much used for epilepsy, ½ gr. to 2 gr. twice or three times a day. Dial, diallyl barbituric acid, is used in many of the mental hospitals and I have found it useful as a hypnotic. But like other drugs of this series it is not well to continue its use for long: the dose is one tablet of 1½ gr. to one and a half to two tablets. Most of these hypnotics in powder or tablet form should be given in hot milk or some other hot fluid half an hour before bed-time. But it should always be our main endeavour to restore the habit of normal sleep, by the ascertainment of the causes of sleeplessness and removal thereof.

[1] Text-book of Pharmacology and Therapeutics, Poulsson, edited by W. E. Dixon.

DAVID LEWIS EPILEPTIC COLONY.—At the annual meeting, held in Manchester, Dr. Alan McDougall, the director of the colony, emphasised the importance and success of the early treatment of epilepsy. In the congenial surroundings of the colony a considerable number of chronic sufferers had ceased to have fits, and had returned to the outside world. If patients entered at an earlier stage of their illnesses, he said, the results would be better still. Many children who were in the residential school of the colony ceased to have fits, and were now back at their homes and earning their own livings. In his own home among his healthy brothers an epileptic child usually became peculiar, spoilt, and unpleasing, and remained uneducated. At a colony the children were not made to think themselves invalids or abnormal. It seemed probable that the determining factor in the beginning of epilepsy in a child was often some untraced mental irritation in the child's circumstances. The mere removal of the child to the congenial atmosphere of a residential epileptic school apparently was often enough to end the trouble, provided that the delay had not been allowed to set up the fit habit. The first fit should be the indication for a child's immediate removal. In view of the importance of treatment of epilepsy in the early stage of the disease the committee have decided to proceed with the erection of a new home for 32 boys—the provisional estimate of the cost being £18,000.

THE USE OF SUCTION IN SURGERY.

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UPON many occasions in the history of surgery the use of various contrivances for producing suction has been advocated and tried, but with the exception of one or two important instances such methods have rapidly been abandoned and the apparatus discarded. These exceptions are the suction apparatus known as an aspirator used in dealing with pleural effusions; the syringes used for aspirating abscess cavities and withdrawing blood and other fluids for investigation; and the method of producing passive congestion introduced by Bier. To these may also be added the use of Cathcart's apparatus for draining the bladder after prostatectomy, although this has now been largely superseded by the use of the Irving "tortoise."

Of the addition of such apparatus to the armamentaria of the surgeon, or of their use in the ordinary technique of general surgery, there is, however, little sign. The reasons for this apparent indifference to an innovation which is not without its advantages are probably not far to seek. Most of the appliances so far invented have been rather clumsy and, although perhaps satisfactory for particular work, peculiarly unsuitable for general surgery.

A more weighty reason, however, is the fact that they have been regarded as cumbersome instruments, perhaps rendering the surgeon's work a little more easy, but quite devoid of any higher value. Indeed, up to the present suction in general surgery has been condemned as only a complicated substitute for an ordinary swab. There has been, besides, the natural antipathy to adding to the already overburdened instrument cabinet. Complexity, however, is in itself of no real disadvantage if the results obtained are satisfactory. The modern operating cystoscope and the Albee electro-operative bone saw are sufficient instances of this. The use of suction does unfortunately imply additional apparatus, but if it can be proved that it is of convenience to the surgeon, and, what is much more important, that it is a real advance in technique intimately affecting results, then this is of little importance.

Fields of Usefulness for the Suction Apparatus.

The essential characters of a suitable apparatus will be considered later, but at first it must be questioned whether it supplies an actual need. As a type case the perforation of a duodenal or gastric ulcer may be taken. Here the aim of the surgeon may be summed up as follows: The perforation must be closed, the abdominal cavity emptied as thoroughly as possible of its contents, and, since the patient is often profoundly shocked, the whole must be performed as rapidly as is consistent with thoroughness. The author has found during the year the apparatus has been on trial that its use not only shortens the time taken considerably, but that the peritoneal cavity is emptied more completely than by any other method, with the exception perhaps of massive lavage, which for many good reasons has become almost obsolete. In such cases, therefore, the advantages of suction are established, but they by no means end there. The modern tendency of abdominal surgery is to avoid drainage except in cases of overwhelming infection, and to rely very largely upon the general resisting powers of the peritoneum. The success which attends this method of treatment depends upon two factors. In the first place as little residual infective material must be left behind as possible, and in the second the endothelial lining of the peritoneum must be preserved intact over the greatest possible area. Both of these desiderata are much more nearly achieved when suction is employed than by the common method of swabbing. Suckers can be designed which damage the endothelial lining scarcely at all, and at the same time rapidly empty the cavity of every drop of contents. Where large portions of solid food have escaped this statement may not be strictly true, but such cases are few and far between in these days of early diagnosis, and even then suction will be more effective than other methods. Surgical instinct shudders at seeing a large cotton swab pushed into the pelvis, twisted around, and then withdrawn, bringing with it portions of detached endothelium and much valuable lymph.

The removal of and damage to endothelium not only diminish the immediate resisting powers of the peritoneum, but also lead to the formation of adhesions which may ultimately cause serious symptoms.

Experiments which have been recently performed in America and elsewhere upon the formation of adhesions prove conclusively that damage to the endothelial coat is the most important point in their production, and that conversely as long as the endothelial coat remains reasonably intact there is little fear of their formation. This explains the failure of many of the methods of preventing adhesions, for where the endothelial coat is already lost over large areas nothing appears to be of any avail, while some of the materials used—i.e., ether—were in themselves capable of destroying this coat. In actual surgical practice prolonged and chronic infections, and the irritation caused by foreign bodies (the chief of these being drainage-tubes) are the common causes. Inasmuch as suction reduces the number of cases in which drainage is necessary, leaves the endothelial lining intact, and empties the abdomen of foreign and infective material most thoroughly, it is hoped that its use will diminish the mortality and very largely prevent serious sequelæ.

In other realms of abdominal surgery it will be found equally useful. In the case of rupture of an ectopic gestation the more fluid portions of the blood can be easily removed without disturbing the general abdominal contents; the method of removing clot by suction will be again referred to when the apparatus is described. Within the last year it has been suggested that in such cases the blood should be collected and after suitable treatment returned to the patient by infusion. The author has not had a case in which he thought this advisable, but by the use of a suction apparatus its performance could be carried out in a perfectly aseptic manner without exposure even to air. In cases of suppuration about the appendix or in the pelvis the pus can be aspirated in the early stages of the operation without fear of spreading infection. Its use is not limited, however, to emergency or infected conditions; in operations upon the gall-bladder and stomach there is frequently some leakage of bile and oozing of blood over the field of exposure. A small sucker can be attached to the blade of a retractor down to the kidney pouch which, without disturbance of the wound, will periodically remove all this. In bladder operations, too, it can be similarly attached, and will keep the field clear of urine and blood, thus reducing the necessity of harmful swabbing to a minimum. As another instance, if it be thought advisable the chest can be rapidly emptied completely of pus after resection of a rib without disturbing or distressing the patient. In bone and joint surgery, indeed in any case where there is oozing or exudation and it is essential to keep the field dry with a minimum of trauma, the same applies. The special case of surgery in and about the mouth must be dealt with in greater detail.

The introduction of insufflation anæsthesia has relieved the surgeon's anxiety very considerably in such cases, but it is not always available, and in any case has no effect on the collection of blood in the mouth except to prevent it from entering the larynx. If a flexible sucker, such as is described later, be introduced into the naso-pharynx through the nose the whole throat can be kept dry by its occasional use with no inconvenience to the surgeon whatsoever. Every surgeon who operates upon cleft palates at

all frequently knows that the bugbear of these operations is the constant interruption for swabbing away blood, and that these repeated swabbings damage the freshly cut edges of the palate to such a degree that I have known a very experienced operator attribute a failure of union to this cause alone. The advantages to be derived from the use of a suction apparatus in these operations must be seen to be believed.

The author has had the opportunity of performing cleft palate operations for several years, and has no hesitation in saying that since the introduction of suction the results obtained have been very much improved. In suitable cases the whole operation can be conducted without the use of a single swab, and if it should be necessary they are used merely to keep up pressure and need not come into contact with the freshened surfaces. The operation proceeds rapidly without interruptions, and there is no risk of blood being either inspired or swallowed. Incidentally, the apparatus has also been found of value in cases of post-anæsthetic vomiting, to empty the pharynx quickly without producing further gagging. In cerebral surgery, too, by the use of specially designed suckers the field can be kept free of blood with a facility unknown when other methods are employed, and the surgeon's fixity of vision is not interfered with, a point of great importance in many rather delicate operations.

The illustration shows the pump as attached to the gas cylinder, together with collecting bottle and sucker. The different types of sucker heads are shown enlarged below.

Essential Characters of a Suitable Suction Apparatus.

From a consideration of the above it will be seen that there can be no doubt as to the surgical value of the method, and we must now return to a consideration of the essential characters of a suitable apparatus. These can be summed up by saying that it must, as far as is possible, be universally useful for all types of cases and at any place, so that it must not only be easily portable but the power should be obtainable without difficulty, and the number of sucker heads, at least for general purposes, should be reduced to a minimum. An apparatus of the type of Potain's aspirator worked by a hand pump, while satisfactory for its special purpose, would obviously be of little use for the continuous suction required in general surgery, and any hand or foot operated pumps, if of a size suitable for continuous suction, would be clumsy to handle and not easily portable. The most popular suction pump at the present time is a reciprocating or rotary one worked from a small electric motor. These are certainly very efficient, but are only available where the correct type of current is laid on, the weight of the accumulators or transformers and resistances otherwise necessary being prohibitive.

This is really, however, not a very great disadvantage, since there are few places nowadays without an electric supply. A much greater disadvantage is the fact that the apparatus is of considerable size and weight, and in addition all those at present designed run with an excessive amount of noise and vibration. The vacuum produced by these pumps is comparatively high, and tends to rise when there is any obstruction to the sucker head. This at first sight may appear to be of advantage, but when it is considered that important structures may be drawn into the head with excessive pressures and so damaged, it will be recognised that an apparatus producing a strictly limited but nevertheless sufficient pressure would be more valuable.

Description of the Apparatus.

It was for these various reasons that the author devised a suction pump on a totally different principle, for which the following advantages are claimed. It is very small, weighing together with attachments but six ounces, and can be carried in the operating bag with the actual suckers themselves. Worked from cylinders of compressed gas, either oxygen, nitrous oxide, or air, it is vibrationless and quiet in action.

The question of convenient power was a difficult one. Something after the nature of the ordinary filter pump working off the water main would certainly have served the purpose, but it is rare for such water pressure to be obtainable in the actual operating theatre, and to have led the suction tube from the adjoining sterilising room would have necessitated a great length of inconvenient tubing and considerable loss of power. In addition, its use in the rooms of a private house would be precluded in most instances. An oxygen cylinder is, however, an essential part of the equipment of every operating theatre, whether in hospital or nursing home, and in the rare cases where it is not likely to be available there is little difficulty in transporting a small cylinder for the purpose. In cases of emergency it is well to remember that these are stocked by most chemists, or one of the anæsthetist's nitrous-oxide cylinders can be used. Where cylinders of compressed air are available they will, of course, be used in preference, but at present compressed oxygen is not only easier to obtain but, strange to say, cheaper. The actual power is obtained from the velocity and expansion of the issuing gas. This is led via a short piece of pressure tubing to a small nozzle situated just behind the narrowed orifice of a small cylindrical chamber, both the internal and external leads to the orifice being parabolic in contour.

Partially blocking the orifice is an obturator also parabolic in shape. The issuing gas therefore, by its momentum and expansion, creates a negative pressure in the chamber, a certain degree of turbulence being produced at the orifice. From the chamber a side tube is connected to the collecting vessel and via this to the sucker itself. It will be seen that there is a maximum vacuum produced which is constant for fixed size of nozzle and orifice, position of obturator and pressure of issuing gas; and that this vacuum cannot be exceeded even although the sucker be completely blocked as long as these factors remain constant. This is a unique feature of a pump of this type and acts as a kind of safety-valve, automatic in its action, preventing important structures being damaged by working their way into the end of the sucker. In an experimental model various sizes of nozzles were tried, and it was found that the smallest nozzle would give a negative pressure of nearly 300 mm. of mercury, while at the same time being sufficiently economical of gas. Considerably greater

negative pressures than this can be obtained by the use of larger nozzles with some loss in economy, but in practice it will be found that the vacuum given above, which equals between six and seven pounds to the square inch, is ample for all ordinary purposes. In the standard model the nozzle and the obturator are both adjustable. The general efficiency of the pump is extremely sensitive to slight variations in the positions of these, and for this reason, if the pump is to be used on fixed pressures, it is advised that a model with fixed nozzle and obturator be obtained. In other cases the maximum position can be obtained by trial, a negative pressure mercury or other manometer being attached to the side tube, the nozzle and obturator can then be fixed in position by the lock nuts provided. Once adjusted, there being no moving parts, no further attention is required. If by an oversight the collecting bottle should become so full that its contents are sucked over into the pump itself, the latter may be easily cleaned by unscrewing the whole of the front end which includes the obturator when the interior is well exposed. If desired, nozzles with varying apertures from 0·5 mm. to 1·3 mm. can be obtained; the larger sizes are rarely required, however, and the standard nozzle is 0·5 mm.

It should be mentioned here that although this pump bears a general resemblance to the well-known boiler injector, the principle underlying its action is essentially different. In the steam injector the negative pressure is obtained by the sudden condensation of the issuing jet of steam as it meets the incoming water. Such a pump will work at comparatively low pressures and will pump against a pressure greater than its own. In the present pump no condensation occurs, the suction being obtained solely by the momentum of the expanding gas. Very high pressures, in the region of 100 atmospheres, are therefore necessary in order to obtain sufficient velocity of flow, and when the pressure falls much below 30 atmospheres the pump loses seriously in efficiency. For this reason the apparatus must work directly off the gas cylinder without, of course, the intervention of any reducing valve. The whole appliance may be attached to the cylinder in its stand, and if the milled wheel of the needle valve be covered by a sterile towel it can easily be worked as required by the surgeon himself, the actual suckers and the collecting rubber tube being the only parts that need be sterilised. In addition to the orthodox method of working the pump given above it can also be attached to the ordinary nitrous-oxide-gas apparatus with foot control, and finally in large operating theatres where high-pressure steam is laid on it may be permanently attached, but in such a case, as the pressure available is much lower, a special large nozzle must be used. Between the pump and the actual sucker is placed a receptacle for collecting the fluids withdrawn. This should be as small as possible consistent with its ability to hold a reasonable quantity without constant changes being necessary. Considerable variation occurs according to the character of the work. For cleft-palate cases a small bottle holding less than a pint will be found sufficient, but for abdominal and bladder work the capacity should not be less than a quart.

A large amount of attention has been paid to the design of the suckers themselves. For the simplest types of work, such as the removal of thin fluids from open cavities with rigid walls, an ordinary piece of rubber or other tubing is all that is necessary. For the majority of cases, however, including abdominal and bladder operations, specially designed suckers are essential if damage to surrounding structures and constant blockage of the tube are to be avoided. A universally useful type of sucker head is that shown in the illustration. All the surfaces are made exceedingly smooth and the suction is applied around the sides only of the expanded head. The tendency for bowel or mucosa to be drawn into the sucker is therefore minimal. The tube is curved above to form a suitable handle for manipulation, and upon the convexity of the curve is an aperture which while the pump is working is closed by the finger.

In the event, however, of there being any tendency for tissues to be drawn into the sucker, and the only tissue which it has been found by practice is likely to do this with specially designed suckers is very thin omentum, the finger is immediately removed from the aperture, thus releasing all negative pressure on the end of the instrument. The same design is made in oval shape for use in narrow cavities, and in flattened form to replace one of the blades of a bladder retractor. Made with a flexible stem it can be moulded to fit any sort of wound, while in small sizes it forms the most suitable sucker for cleft palate cases. For abdominal work, where there are larger quantities of fluid present, the cage sucker head will be found more satisfactory. For clearing blood and fluid from the naso-pharynx a small flexible and flattened head is required, while for operations where the exposure is very limited, such as mastoids and operations upon the base of the brain, Gasserian ganglionectomy, &c., a very fine sucker is demanded. The aim, however, has been to reduce the number of sucker heads required to a minimum, and it will be found that for general work the first type described is sufficient.

In the accompanying illustration the cage and universal suckers are shown first and second. The third is a fine probe-ended sucker made of flexible metal so that it can be bent to enter any small cavity without interfering with the line of vision. It will be found particularly useful in operations upon the brain, but owing to the small calibre care has to be taken that the blood does not coagulate in the orifice. In both the fourth and fifth types the rigid handle is replaced by a flexible metal probe attached to the head. In this case the stout rubber collecting tube is passed over the probe and attached to a suitable rim on the head. The probe can now be bent to accommodate itself to any shaped wound and will carry the rubber tube with it. No. 4 is especially useful in operations upon the gall-bladder, where it can be made to lie well out of the way in one corner of the wound. No. 5 is designed to be passed through the nose and to lie in the naso-pharynx during operations upon the mouth, the probe carrying the rubber tube being bent around the margin of the nostril to hold it in situ. The last illustration is of a sucker designed for use in operations about the base of the bladder and is so shaped that it at the same time acts as a retractor. The following quotation from a recent article upon carcinoma of the prostate by Mr. Clifford Morson illustrates the value of suction in such cases: "Until recently I have been hampered by the blood welling up at the bottom of the wound and obscuring my view, but this obstruction has been overcome by the use of Lake's suction pump. This instrument not only evacuates the blood as it collects, but by a slight modification can be used as a retractor."

In entering into further details concerning the use of these suckers it must be remembered that the real problem is not the suction of thin fluids, but of such materials as blood and thick pus, often containing large flakes of lymph, and it would be as well to state without delay that there are some varieties of pus and of blood-clot which can never be removed by suction. The reason for this is fairly obvious, for at most the atmospheric pressure of 15 lb. to the square inch is available even with a perfect vacuum, and most of the pumps for producing suction fall short of this by a big percentage. The author has conducted experiments which show that a pressure of 15 lb. to the square inch is not sufficient to move old blood-clot or lymph along tubes of such size as can conveniently be used in surgery. The larger the calibre of the tubes the better, and it will be noticed that in this apparatus all tubes have been kept as large as possible. Nevertheless there is a limit beyond which it is not practicable to go, but this limitation only renders the apparatus very slightly less valuable, since the occasions upon which

such materials have to be dealt with are few and far between. To give an example of the type of case the author recently attempted to use suction to empty a psoas abscess without success. By no means could the pus be drawn through the tube, although pressures approximating to atmospheric were applied. When the abscess was opened, however, it was found to be full of a thick caseous material of semi-solid consistency containing even more solid masses.

It has already been mentioned that old laminated clot cannot be removed by suction, but, on the other hand, recent clot which is likely to form during an operation can be removed with ease. There are, however, certain precautions to be taken. If continuous suction is kept up, and this is rarely advisable, no trouble arises, since the blood is kept moving along the tube and does not adhere to the walls. Where the usual periodical suction is used, however, the tube should always be dipped in lotion or a little saline poured into the wound before suction ceases. This washes the tube through and prevents occlusion from the formation of clot in the lumen. The small vent hole in the handle of the sucker will be found of great value where there is any tendency for the tube to become blocked, for if the hole be alternately closed and opened an intermittent suction is applied to the contents which is often successful when continuous suction fails; it will frequently, for instance, break up freshly clotted blood and detach it from the walls. Occasionally it will be noticed that the fluid in the collecting bottle tends to froth. If this becomes excessive it can be remedied by a little liquid paraffin. It has already been stated that the collecting bottle need not be sterilised, but if this precaution be taken fluids can be collected for bacteriological examination.

The apparatus can be used in conjunction with the bronchoscope or œsophagoscope for the removal of blood and secretions, and also more directly for the actual removal of certain types of foreign body, a specially shaped tube being applied to the object which is held in position by suction while the tube is removed. Finally, the author has found this pump indispensable in emptying the stomach completely of its contents as a preliminary to gastroscopic examination.

Since writing the above it has been brought to my notice that the Michelin Tyre Co. supply cylinders of air compressed to 1800 lb. to the square inch, at a little more than half the cost of a similar sized cylinder of oxygen.

The instrument is made by the Genito-Urinary Manufacturing Company, Ltd., of 64, Great Portland-street, W. 1, and I am indebted to their Mr. Schranz for the extreme care and accuracy with which he has carried out my ideas.

INTUBATION OF THE COMMON BILE-DUCT FOR STRICTURE.

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ONE of the most difficult positions in which the surgeon can be placed is that of having to deal with a stricture of the common bile-duct after he has removed the gall-bladder, for the one definite use to which the gall-bladder can be put is to serve as a channel for the bile to reach the intestine by means of an artificial anastomosis made by the surgeon. Usually the operator is wise enough not to remove the gall-bladder until he has made sure that he has taken away the obstruction, but cases occur in which with all care the unfortunate condition of biliary obstruction may remain or develop after the viscus has been ablated. We assume that the obstruction is not due to a removable cause such as stone.

Chronic pancreatitis and growth of the head of the pancreas may arise at any period after the gall-bladder has been removed, and it is particularly to this class of case that the method I wish to describe is applicable. It is possible, of course, to divide the common bile-duct and anastomose it to the duodenum, or to make a lateral anastomosis between the bile-duct and the intestine; the technique for this has been well described by Walton. It must be admitted, however, that any operative method which includes the opening of the duodenum and the making of an artificial duct adds considerably to the risk in a patient who already may be sufficiently weak.

In a case which presented this problem I lately had recourse to an expedient which I have never known to be practised previously, and which has certainly had a wonderful immediate effect, and might well have a beneficial influence in other cases of a similar nature. Briefly, I dilated up the strictured portion of the duct by means of a Lister's bougie, and then intubated the stricture with a rubber drainage-tube which was left in the duct. The particulars of the case are as follows:—

Mrs. A., aged 66, began to have an irritation of the skin in June; on the 24th she vomited some acid material, and on the 30th she consulted a doctor. There was slight jaundice. The jaundice gradually increased and the irritation became torturing. She could not sleep, and sometimes had "shudders" without feeling cold. There was no pain at any time, nor had there been any serious illness at any period of her life. A week later I saw her in consultation. There was then extreme jaundice and tormenting itching, and the skin bore clear evidence of scratching. There was no pain, and no abdominal tumour could be felt. Pressure in the right hypochondrium elicited slight tenderness. Liver not demonstrably enlarged. We agreed upon the diagnosis of growth of the head of the pancreas and advised operation with a view to anastomosing the gall-bladder to the intestine.

Operation.—On August 10th an operation was undertaken at the local hospital. The abdomen was opened by a right paramedian incision splitting the rectus. The liver was found enlarged, and the gall-bladder tensely distended, but not projecting beyond the liver-edge. There were omental adhesions to the gall-bladder, and the liver near the gall-bladder showed a cystic dilatation. The gall-bladder was aspirated, much thick yellow stuff came away, and two very large gall-stones were removed. The stones were so large that they bulged towards the common duct, and it was thought that the liver-cyst and the stones might have caused temporary obstruction of the duct. No thickening or enlargement of the head of the pancreas was detected, though special search was made, nor was any stone found in the common duct or cystic duct. Cholecystectomy was performed. In separating the viscus from the liver an adhesion was broken and a copious flow of glairy material emptied the cyst. A tube was inserted into the beginning of the cystic duct and the abdomen closed.

Progress was satisfactory for a time. On August 27th all but an ounce of bile daily was passing by the normal channels; the jaundice disappeared, and the stools regained their normal colour. A week or two later, however, the jaundice reappeared, and the bile again began to discharge through the abdominal wound. This condition became worse, so I advised further exploration.

On Oct. 9th I reopened the abdomen and found to my dismay that there was a hard mass the size of a walnut projecting forward from the head of the pancreas. I explored the common duct and found no stone. In exploring the duct the idea occurred to me that it might be possible to dilate the stricture of the duct. I therefore passed a probe through the narrowed portion with some difficulty, and succeeded in dilating the stricture with a series of Lister's bougies. Knowing that the duct would soon contract again I then inserted with difficulty a small rubber tube so that it was tightly fixed in the stricture. Drainage down to the common duct completed the operation.

For 14 days after the operation the bile continued to come away through the abdominal wound, but then the wound completely healed and the stools regained their normal colour, and the patient left hospital looking and feeling well on Nov. 15th.

The patient has thus experienced the great benefit of being relieved of the jaundice.

FIBROCYSTIC DISEASE OF BONE.

NOTES ON THE PATHOLOGY OF TWO CASES.

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THE pathological origin of cystic cavities occurring in the medulla of long bones has for some time been a matter of contention. Apart from the rare cases of hydatid disease of bone, the majority of cysts have been ascribed to degenerative changes taking place in myelomata; that a solitary cyst in bone can be formed primarily is doubtful. In most of the published cases it seems probable that they are secondary formations.

An interesting group of cases, both from the pathological and clinical standpoint, are those in which one or several cysts occur in pre-formed fibrous tissue, replacing the true compact bone. Von Recklinghausen was the first investigator to classify and name this group, "osteitis fibrosa cystica," and Elmslie collected and published a series of such cases. Lawford Knaggs, in his Hunterian lecture of January, 1923, gave the following clinical classification: (1) cases in which the prime change is the development in the bone of a uniform mass of fibrous tissue; (2) cases in which such a uniform mass is showing signs of degenerating into cysts; (3) those in which much bone is developed, and the disease appears to be coming to an end; (4) single cysts of bone.

I quote this because the two cases about to be described fall exactly under the first two heads, illustrating an early and late stage of this condition. Both cases occurred in girls aged 14 years, and in both the right femur was affected, in one the upper and in the other the lower end.

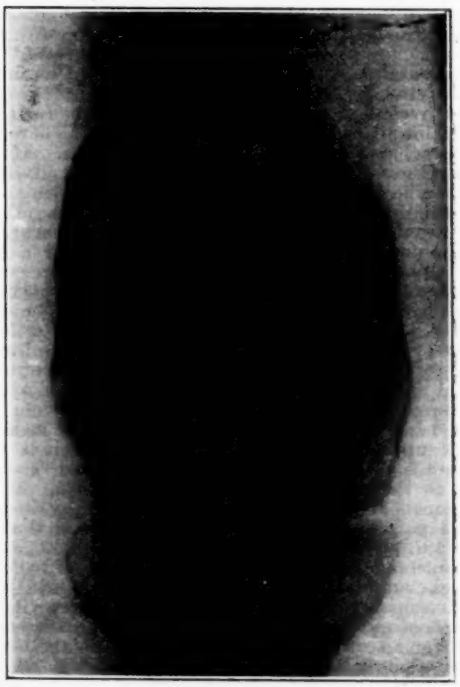
FIG. 1.

CASE 1.—Showing material curetted from cystic cavity opposite the lesser trochanter of the right femur. Definite spindle-celled fibrous tissue can be seen, with inter-fibrillar spaces containing non-staining myxomatous tissue.

CASE 1.—H. H., aged 14, fell on the right hip in March, 1920, and about three weeks later complained of pain over the great trochanter. She was admitted to the West Hants Hospital, Bournemouth, and as there was some limitation of movement, was considered to be an early case of tuberculous arthritis, and treated as such with benefit, the pain and limitation of movement disappearing.

A year later, however, she was readmitted with similar symptoms, and an enlargement of the subtrochanteric region of the right femur noted. An X ray showed this to be a cystic cavity. This was explored, the medulla opened, and a quantity of vascular myxomatous tissue removed. The pathologist's report was "spindle-celled sarcoma undergoing myxomatous degeneration and necrosis, probably highly malignant" (Fig. 1). A further curettage of the cavity was performed in July, 1921, and the pathologist's report

FIG. 2.



CASE 2 (July, 1922).—Radiogram showing large cystic expansion of lower end of femur, with marked bony trabeculation suggestive of a myeloma.

was "spindle-celled sarcoma undergoing myxomatous degeneration—erosion of bone seen in part of the section."

In view of these reports she was admitted to Middlesex Hospital in August, 1921, under the late Mr. T. H. Kellock, for radium treatment. Strangely enough, Case 2 was in the same ward at that time and a diagnosis of "osteitis fibrosa cystica" made in each case. In this instance it was considered, in view of the diagnosis, that treatment had been sufficient, and the patient was sent home to be kept under observation.

Since then she has been perfectly well, the affected femur is normal, and she is in no way incapacitated.

CASE 2.—E. R., aged 14, was treated at Middlesex Hospital in November, 1920, for a supracondylar fracture of the right femur. Skiagram showed no pathological bone change and good union was secured with ordinary extension apparatus.

In June, 1921, she was readmitted under the late Mr. Kellock, the right femur having been re-fractured in the same locality, this time whilst she was walking to work. There now appeared to be a globular swelling of the lower end of the femur, and an X ray showed a large cystic cavity expanding the bone and causing a secondary fracture. A diagnosis of "osteitis fibrosa cystica" was made, and the site of fracture explored. A greyish gelatiniform mass was found to be protruding from the femur, and on being scraped away a large medullary cavity was evident, through which the fracture had occurred. Several large bony trabeculæ were present. It was cleaned out with spirit and filled with decalcified "bone bobbin," the patient treated with extension as before, and discharged after six weeks with a walking calliper splint.

The pathological report on the material removed was as follows: "The general appearance of tissue is that of a myxoma. It consists mainly of irregular branching nuclei, often widely separated from one another by an almost homogeneous matrix. Blood-vessels are numerous, and there are large areas of hæmorrhage scattered throughout. Some polymorphonuclear leucocytes are present. The possibility of this tumour being a sarcoma in which mucoid degeneration has occurred must be borne in mind."

By July, 1922, the femur had again become very swollen (Fig. 2), and no weight could be borne on the limb. The patient was again admitted and curettage of the cavity performed, Morton's fluid being injected. Section of the curetted material showed numerous spindle-shaped nuclei separated by fine fibrils, and was diagnosed as a "fibro-sarcoma." In December, 1923, the swelling of the femur had greatly increased, and as the limb was now shortened to the extent of 2½ inches, Mr. John Murray decided to amputate. This he performed through the middle third of the right femur, the shaft at site of section showing no pathological change. The patient made an uneventful convalescence, and has since then been perfectly well.

Pathological Considerations.

Macroscopic.—The amputated limb was frozen and sawn sagittally through the knee-joint (Fig. 3). A fracture is present at the supracondylar region of the femur, a fairly compact shaft fragment being impacted into a spongy and cystic condylar portion. Occupying the last inch of the entire medullary cavity is a large multilocular cyst. The lower portion consists of a spongy fibrous matrix, with a tendency to lamination in places. There are numerous small cystic spaces and several areas where hæmorrhage has occurred. The knee-joint is intact, although cartilage erosion appears to have begun at one place.

Microscopic.—Sections taken from portions of the affected area show: (1) At the edge—definite invasion of bone under the epiphyseal cartilage by a delicate connective-tissue reticulum with scanty spindle-shaped nuclei. (2) Centrally the reticulum becomes definitely fibrous with many scattered and elongated spindle-shaped cells, and cystic spaces are present. They are empty and possess no lining membrane. The larger ones appear to have been formed by the breaking down of the intralocular septa. Fibrous tissue bundles are especially prominent in places, and, cut transversely, give an almost small round-celled appearance.

FIG. 3.

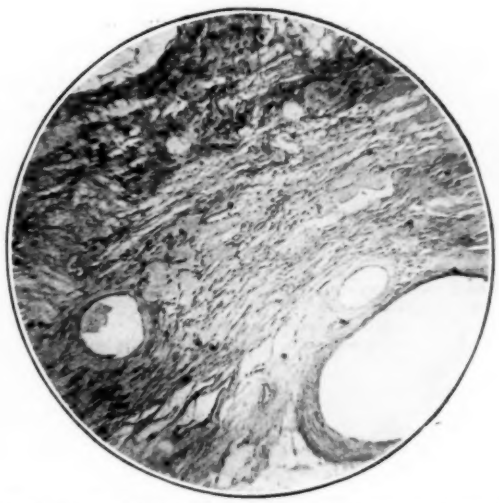
CASE 2 (December, 1923).—Amputated limb sawn sagittally. The tibia is quite normal, but the markedly cystic and spongy nature of the lower end of the femur can be seen.

There is an entire absence of fat and of any giant cells of the myeloma type.

Summary.

Thus two similar pathological conditions were occurring in each case, in the one in the upper and subtrochanteric region of the femur, and in the other in the lower or supracondylar region. Two independent pathologists of repute suggested the possibility of a spindle-celled sarcoma undergoing malignant degeneration in each case, and this very naturally, as a myxofibroma occurring endosteally is a practically unheard-of phenomenon. The pathological condition, however, seems clear. The preliminary change is the appearance of fibrous tissue in the marrow, which becomes entirely replaced. Later, an invasion and absorption of the compact bone occurs.

FIG. 4.



CASE 2.—Showing laminated fibrous tissue with cystic spaces.

A later development is the formation of cystic spaces within the fibrous tissue, the coalescence of these leading to larger cysts (Fig. 4). Such a condition, if it extends, will inevitably lead to secondary fracture. The preliminary treatment in each case was the curetting away of all affected tissue, and this, if done sufficiently early and thoroughly, would seem to be sufficient (vide Case 1). Should the condition progress, however, amputation appears to be the only available line of treatment, as in Case 2.

Why such a replacement of compact bone by fibrous tissue should occur is hard to say. In neither of these cases was there any evidence of inflammatory change. Knaggs believes that the condition arises in response to toxic influences which select a site that is in some way devitalised. That the disease may affect most of the bones of the skeleton is recognised, just as in osteitis deformans; and illustrative cases have been published by Von Recklinghausen and Fugii, and this has been advanced as an argument in favour of a general bony change, induced by toxic elements. At the same time there seems to be no great argument against the fact that the condition may arise primarily as a myxofibroma of bone, and that in rare cases, just as in "multiple myelomatosis," several bones may be affected.

I am indebted to Mr. John Murray for permission to publish Case 2, and to Dr. Knyvett Gordon for the loan of section of Case 1.

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A CASE OF OSTEITIS FIBROSA.

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THE following notes with illustrations of a case showing the typical pathological changes described by Paget,[1] but associated with fragility of the bones and bone tumours, are worth recording, owing to the relatively rare incidence of the condition.

H. W., a married woman, aged 40, was admitted into the Sheffield Royal Hospital, under Prof. Arthur J. Hall, complaining of general weakness and pain in the sides, back, and head.

Previous History.—She complained of having suffered from "rheumatism" for years. Five years previously the patient had a growth removed from the lower jaw in Ripon Hospital, and was discharged as cured. She has had no children or miscarriages.

History of Present Illness.—Three years previous to admission she had noticed the development of general weakness with increasing inability to move about. Her periods became irregular, and she had some attacks of severe flooding. On admission she complained of pain in her joints. She looked emaciated and pale, and had palpitation on the least exertion. The heart was enlarged, and there was an apical systolic murmur conducted into the axilla. The brachial and radial and the arteries of the leg showed extreme thickening, so that the pulse (about 85) was difficult to take at the wrist.

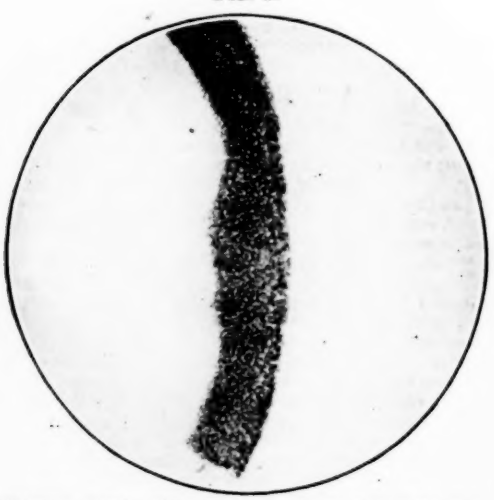
Osseous System.—There was marked bending forwards of the whole sternum, forming an arc with convexity forwards. There was slight kyphosis in the lower thoracic region. There was no noticeable bowing of the limbs. No undue fragility of the bones was observed during life, and there had been no history of fracture.

The urine contained a large quantity of albumin.

Progress.—The symptoms and signs of chronic granular nephritis were so marked and the arterio-sclerosis so extreme that there seemed no reason to look for anything further. Ten days before her death she had a fit and became unconscious. There was frothing at the mouth, but no twitching or convulsion. The third day following this attack she became acutely maniacal with some vomiting. There was no pyrexia. Next day the maniacal symptoms had disappeared, but the vomiting continued. This was followed by a return to the maniacal condition with commencing gangrene of the finger-tips. Two days later, on the day before her death, the toes were similarly affected.

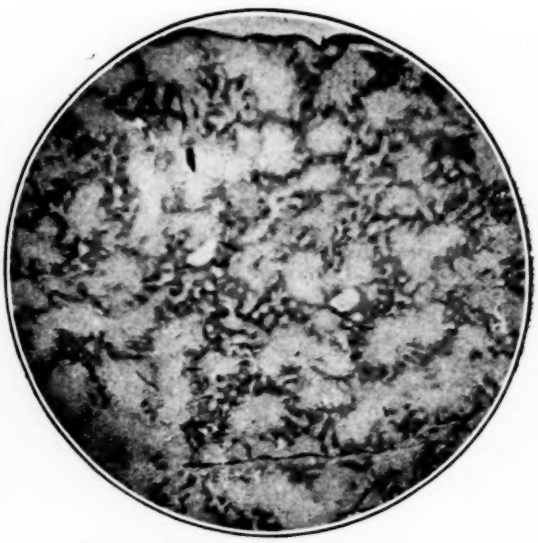
Post-mortem Examination.—An abnormal bone condition was discovered on removing the skull-cap. The screws of the "P.M. helmet" were found to penetrate the bone very easily. The vault wall was, in fact, cut with a knife with a sensation of cutting something soft containing grit. The skull wall was found to be irregularly increased in thickness, varying from 8 to 18 mm. All distinction of diploë had disappeared and the cut surface presented a speckled appearance with minute translucent areas studded through the bone (Fig. 1). On attempting to cut through the rib cartilages it was found that the ribs themselves were quite fragile and could easily be broken with the fingers. On the eighth left rib a large swelling was seen close to the neck (Fig. 4). Two other ribs had each a much smaller swelling. The vertebræ could be cut through quite easily with the knife. On raising the right leg during the post-mortem examination the femur broke across. The coronary arteries were sclerosed and the muscular tissue of the heart was soft and friable. In the aorta there were only slight atheromatous changes,

FIG. 1.



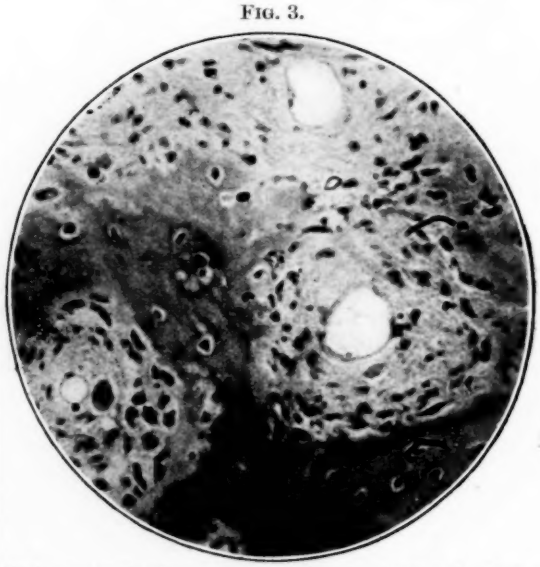
Radiogram of thin slice of skull vault, showing replacement of normal by irregular areas of calcified and uncalcified tissue.

FIG. 2.



Transverse section of skull vault. The dark areas represent calcified parts; in the lighter, the cells are of the interstitial spindle-cell type.

FIG. 3.



Higher magnification of part of Fig. 2, showing the darker calcified area and the vascular nature of the uncalcified tissue.

[1] Paget, James: Medico-Chirurg. Trans., 1882, lxv., 225.

but the more distal arteries of the limbs were extremely narrowed and calcareous. The splenic artery was also sclerosed and calcareous. The kidneys were very small and showed extreme cirrhosis; the arteries here were much thickened. The calyces contained numerous small calculi.

FIG. 4.

Showing tumour on the eighth rib, a fusiform swelling with a maximum circumference of about 4¼" at the level of the angle of the rib.

Review of the Case.

Reviewing, then, the main facts of the case, the definite irregular enlargement of the skull vault with

FIG. 5.

Section of the growth shown in Fig. 4. Shows dark calcified lamellæ separated by irregular delicate but highly vascular fibrous tissue. The growth appears to be benign.

haphazard calcification and absorption, a history of intermittent pains ("rheumatism"), the bone tumours, and the extreme atheromatous condition of the smaller vessels—they all point to Paget's disease. The wasting condition in the ribs and other bones, where the cortex is being irregularly replaced by a delicate vascular fibrous tissue (thus making these bones extremely fragile), suggests, however, that the case might perhaps be more correctly classed among those associated with the name of von Recklinghausen—at least, the post-mortem findings and histological changes are very similar to those described by him under Osteitis Fibrosa, in Section 1B, Case 7, of Virchow's "Festschrift."[2]

FIG. 6.

Shows the process in the ribs; the cortex undergoing absorption to be replaced by delicate vascular fibrous tissue. Marrow cavity not yet encroached upon.

In conclusion, I would express my thanks to Prof. Hall for his kindness in allowing me to publish the notes of this case, and for his criticisms and help.

INHERITED SYPHILIS AND TUBERCULOSIS.

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THE following paper comprises the results obtained and views formed from an investigation into the incidence of inherited syphilis among 100 children admitted to Fife and Kinross Sanatorium. In this investigation a routine serological examination was made in 100 children, medical and surgical, as they were admitted. It was hoped to determine (1) the incidence of inherited syphilis among 100 tuberculous children; (2) how far syphilis predisposes to the superadded infection with tubercle bacilli (T.B.); and (3) how far the conditions could be modified by anti-syphilitic remedies.

One was careful to obtain indisputable evidence of the existence of both infections. In all cases of pulmonary lesions careful methods for the discovery of the T.B. in sputum were resorted to, and an effort was made to obtain cultures. Where T.B. could not be found and could not be grown the skin sensitiveness was taken as evidence of infection. In this connexion it is well to note that inherited syphilis does not of itself give a positive skin reaction to tuberculin.[1] In the surgical cases, any abscess or exudate was carefully examined for T.B., and if none were found a guinea-pig was inoculated; where no

[2] Festschrift Rudolph Virchow, zu seinem 71 Geburtstage, Berlin, 1891.

abscess or exudate existed skin sensitiveness was again resorted to.

With regard to infection by the spirochæte, while a positive Wassermann reaction (W.R.) was strongly suggestive the various stigmata were always looked for. Some of the cases exhibited excellent examples of late luetic lesions, such as interstitial keratitis, atrophic rhinitis, and the various dental anomalies. In only one case was there failure to discover any lesion suggestive of inherited syphilis when the W.R. was positive, but Gougerot[2] points out that hereditary syphilis can exist without stigmata. According to Harrison,[3] 95 per cent. of inherited syphilitics give a positive W.R., while 5 per cent. may fail to give it. The W.R. wanes as the child gets older, and Dean[4] surmised that a series of young children would probably give a fairly high percentage of positive results.

Literature.

A comprehensive review of the literature which has arisen around these dual infections is to be found in the *Archives of Dermatology and Syphilology*, August, 1921, Hollander and Narr. In a paper by these two authors there is a detailed percentage of positive Wassermann reactors found among the tuberculous by various workers. Some of the figures correspond very closely to our examination of 100 adults.* Thus Letulle, Bergeron, and Lépine find 19 per cent. positive, Vedder 23 per cent., and Petroff 22 per cent. A similar investigation so far as children are concerned does not seem to have been made. Hochsinger[5] is of opinion that children with hereditary syphilis offer a favourable ground for the reception and development of tuberculosis. Fournier[6] remarks that tuberculosis so often develops on a basis of syphilis that inherited syphilis should be suspected in masked cases. Again, D'Arcy Power[7] says children with hereditary syphilis often show signs of tuberculous disease of joints. Gougerot[8] writes on hereditary syphilis that there are often enlarged glands associated with the bacillus of Koch. Emile Sargeant[9] writes that tuberculosis awaits the inherited syphilitic. Hutinel and Merklen[10] found evidence of congenital syphilis in 11 per cent. of 206 cases of tuberculous meningitis. They consider that the meninges are damaged by syphilis and thereby predisposed to tuberculous infection. In South Africa Brock,[11] in an inquiry as to the incidence of syphilis among natives, writes that syphilis prepares the way for tuberculosis, that it plays a rôle in the production of lung disease in youth and adult, the importance of which has not been recognised.

1. *Incidence.*

If it is true that inherited syphilis plays a part in the production of tuberculosis, then one would expect the incidence of inherited syphilis to be higher among tuberculous children than among a general "child" population of the same age and social status. Fortunately figures are available. Quoting from Leonard Findlay[12] Browning put the incidence of inherited syphilis among a general child population at 10 per cent. Elliot,[13] in a series of 130 children, found the incidence to be 10·8 per cent., but he thought 8 per cent. would be a truer indication, as he felt he had included an unusual number of typically congenital syphilitics. Churchill and Austin[14] found among 695 children in Chicago that 3·3 per cent. presented clinical evidences of syphilis. Among 100 children examined at Glenlomond the incidence of inherited syphilis works out at 11 per cent. There has been no selection of cases, and each child has had a W.R. done in the first week of admission.

The tuberculous lesions in the 11 per cent. were as follows. Seven patients showed enlarged glands, four of these were cervical, one abdominal glands, and two intrathoracic glandular enlargements. One patient was a tuberculous spinal case. Six of the patients showed pulmonary lesions, two of these also showed glandular enlargements, while from four of them T.B. were found in the sputum. The syphilitic lesions were definite in most of the cases and are described individually.

2. *Does Syphilis Predispose to Tuberculous Infection?*

A study of the pathogenesis of tuberculosis suggests a similar route of spread to that taken by syphilis. It has been pointed out[15] that the initial sore is commonly unobserved in tuberculosis, but that later there is a gradual spread by the lymphatic stream, for the lymphatic gland which has arrested a polymorph carrying T.B. may caseate and discharge its contents into the lymphatic stream. In the experimental infection of a guinea-pig it is quite easy to trace the spread of tuberculosis following the lymphatic system. In an address on Tuberculosis of the Lymphatic System, Sir Robert Philip[15] describes the extension from the glandular system to the viscera. He points out that this may take place by the thoracic duct or by direct extension from an affected gland into a bronchus or even into a blood-vessel. This is precisely the same route of infection as that chosen by the spirochæte. The only difference in the spread of the two infections is that the spirochæte is much the quicker of the two. Among the cases described by Sir Clifford Allbutt[16] was one where glands were found in the mesentery, mesocolon, and mediastinum of a man who died with a chancre, while the spleen was enlarged, so that in syphilis the spirochæte must reach the viscera in the first weeks after infection.

In dealing with the incidence of inherited syphilis among the tuberculous we find a percentage of 11, while the percentage among a normal child population is under 10. This alone would suggest that inherited syphilis plays only a small part in the production of tuberculosis. It is agreed that most people become tuberculised in childhood, but only a small proportion of those who have made acquaintance with T.B. become tuberculous or suffer from tuberculosis. Presumably in most children the T.B. lie latent, and[17] are found in the lymph nodes or lymphatic glands of the mediastinum in children who have died from other causes. In syphilitic children these same glands have already been infected by the spirochæte, for the spirochæte is very general in its distribution. There has been a pre-tuberculous infecting agent traversing the same route as the T.B. would take.

The lymphatic glands, already somewhat enlarged, can readily arrest any polymorph carrying T.B., and a spread from an enlarged lymphatic gland is now very easy. The whole way of spread is, as it were, ready at an early age for an invasion by T.B., and most of the children found with double infections are under school age. The greatest number of double infections were found among those who suffered from enlarged tuberculous lymphatic glands and the spirochæte was there first. It should be remembered that the spirochæte would not be observed, because at the age at which a child would die from tuberculosis the spirochæte would be difficult to find. But the morbid process due to the spirochæte can be found and the lesions created by the T.B. can also be found.

It should be kept in mind that in general syphilis favours viscera not readily attacked by tuberculosis—e.g., syphilitic disease of the liver is common, but tuberculous disease of the liver is uncommon, and, vice versa, tuberculosis of the lung is common, but syphilis of the lung is relatively uncommon. All pathologists can report post-mortems where the effects of the two diseases are seen, but careful examination as to the existence of the morbid processes of syphilis and tuberculosis in the same organ does not appear to have received much attention. The lymphatic glands are the organs wherein both infections might readily be found to coexist or wherein there might be an implantation of T.B., perhaps on a gummatous gland. Hollander and Narr[5] mention gummatous lymph nodes in the post-mortem report of a patient who died from a general tuberculosis and who suffered also from syphilis. I have

* THE LANCET, 1922, ii., 1376.

been unable to find any other reference to the two morbid processes being found in the same organ.

How far syphilis predisposes to subsequent infection by the T.B. is not readily determinable from an investigation such as this. These children do not die from tuberculosis. If all patients suffering from tuberculosis under 4 years of age were investigated by W.R., and those who die by careful post-mortem examination, something nearer the truth might be obtained. One should note that in tuberculosis the factor which determines the establishment of disease in the child is the dose or the oft-repeated infection by the T.B. A minute dose will only render the child sensitive to tuberculin, while a larger dose or repeated doses will produce disease. I would emphasise that the question is: Will the minute dose of T.B., insufficient to produce more than tuberculin sensitiveness in the normal child, produce tuberculosis in a syphilitic infant?

We cannot even attempt to guess at the truth without complete data from the early deaths from tuberculosis. An interesting observation as it affects the adult is found in the *British Medical Journal* Epitome, Feb. 9th, 1924. J. W. Samson, in Berlin, examined 1300 prostitutes for tuberculosis. Of W.R. positive prostitutes 12·5 per cent. showed signs of active tuberculosis, whereas only 10·7 per cent. of the W.R. negatives did so. Bronfenbrenner[18] likewise attempted to determine the incidence of tuberculosis among a syphilitic population. With a tubercle antigen he examined the sera of 193 syphilitics, and found 83 positive, or 43 per cent.; 55 of the 83 showed clinical signs of tuberculosis. Using the same tubercle antigen, he found 23·15 per cent. among 432 negative Wassermann reactors to give a positive test for tuberculosis. The conclusion he came to was that tuberculosis was readily implanted on a luetic soil. My own figures are small, and the figure of 11 per cent. positive Wassermann reactors does not allow one to state more than that, considering the method of spread of both diseases to be the same, there might be some slight influence favourable to the implantation of T.B. on a syphilitic terrain.

Description of Cases.

CASE 1.—J. P., aged 6 years. Had excision of glands in the neck in 1921 and 1922. She was admitted to the sanatorium on Oct. 4th, 1922. She had three large cold abscesses ready to break down, one submental, one at the angle of the jaw, and one pre-auricular. The chest showed considerable dullness down the right side, and many crepitations and rhonchi could be heard. She was a mouth-breather, the bridge of the nose was rather flat, the uvula was ulcerated and necrosing, while there was notching of the upper incisors, and Moon's teeth were also noted. The W.R. was definitely positive. The father had been in the army, and this child was born after he was home on leave, the older children being healthy. Sputum showed a few T.B. on concentration. The epitrochlear glands were enlarged. There were shotty glands in the posterior triangles. Treatment by "914" injections and ung. hydrarg. was instituted. The patient began to improve at once. The abscesses broke down but healed very rapidly, and the resulting scars are not at all marked or keloid. The W.R. did not become negative till after a second full course of treatment. The child gained weight steadily. Detuberculisation by tuberculin ointment is being steadily pursued, and the result is satisfactory.

CASE 2.—W. M., aged 8. At 4 years of age he had his right eye enucleated, cause unknown. His glands began to swell two years ago, and there is now a discharging sinus. Small shotty glands are to be felt in both posterior triangles. Both apices are retracted and the veins much dilated over the chest. A few crepitations could be heard at the bases. No T.B. were found, but skin reaction was positive. A guinea-pig inoculation from the discharging sinus failed to produce tuberculosis. His left eye showed an interstitial keratitis and slight posterior synechiæ of the iris. The bridge of the nose was much flattened, and the epitrochlear glands were enlarged. Teeth very good. The W.R. was strongly positive. He was admitted in September, 1922, and discharged in May, 1923. He had a full course of "914" and ung. hydrarg. The W.R. was reduced to a weak positive, the glands in the neck gradually disappeared, he gained one stone in weight, and the chest condition dried up completely. The interstitial keratitis cleared away, but the iris showed atrophic edges and was fixed posteriorly to the lens in places.

CASE 3.—M. R., aged 10. This patient was sent to "Glenlomond" with enlarged glands on both sides of the neck, some cough, and spit. There was a keloid scar on the right side of the neck at the site of a previous excision; her step-father has tuberculosis. Sensitiveness to tuberculin was marked. She presented few signs of congenital syphilis. The W.R. was strongly positive, the epitrochlear glands were enlarged, and she presents Sabouraud's sign on both upper first molars. (This sign has been discredited in some quarters, and it is difficult to attach a correct value to it. It consists of the presence of an extra spur of cusp on the inner side of the first upper molar.) She was given a full course of "914" intravenously and intramuscularly, and after a follow-up course the W.R. became negative. The glands disappeared and the patient gained steadily in weight. She has gradually been detuberculised by tuberculin ointment, which was not used till she had a negative W.R.

CASE 4.—S. M., aged 8, admitted April 20th, 1922, and discharged in May, 1923. She had cough and spit and enlarged glands in the neck. Her sputum showed a few T.B., there were crepitations over both lungs, and her finger-tips were clubbed. There was a small scar by a previous breaking down of a cervical gland. Her specific signs were flattening of the bridge of the nose and pegged teeth, while the W.R. was strongly positive. She had two courses of "914" and ung. hydrarg. The glands disappeared, the chest cleared up, the veins of the chest became less prominent, and the only impairment seemed to be a comparatively flat right upper lobe. A small amount of sputum remained, but this failed to show T.B. She gained one stone in weight. Her W.R. became negative. Detuberculisation by tuberculin was not practised in this patient. In the case of this child the doses of "914" had to be very small, the temperature rising very readily after the drug was given. She never got more than 0·1 g. at a time, and indeed began with 0·05 g.

CASE 5.—P. F., aged 6. An advanced case of tuberculosis, and has had breaking down of glands in the neck. She shows a depressed bridge of the nose, and her teeth are pegged and notched. Molars showed Moon's characteristics. W.R. is positive. She has crepitations down both sides and the sputum is T.B. plus. She was given a small course of "914." No improvement was found in her pulmonary condition. Treatment had to be omitted in this case.

CASE 6.—J. S., aged 6. This patient is sensitive to tuberculin, and shows only the evidence of thoracic glandular enlargement. Specific signs are not marked, the dentition is irregular, and the teeth pegged, but the W.R. was strongly positive. The child readily takes bronchitis, but T.B. were never found. She had a full course of "914" and ung. hydrarg. till she became negative. She gained in weight and was discharged well.

CASE 7.—A. C., aged 7. The condition was much the same as the previous case. There was evidence of enlarged thoracic glands, some sputum, and guinea-pig inoculation produced tuberculosis. The child was not left with us, and therefore had no treatment.

CASE 8.—A. S., aged 5. Enlarged cervical glands, many crepitations at the bases, a few T.B. in the sputum, slight ozæna, W.R. positive. Child had a full course of "914" and ung. hydrarg. She has now been under observation for nearly a year, and is slowly improving.

CASE 9.—C. S., aged 10. Curvature of spine. Congenital signs were the various dental anomalies and the W.R. was positive. He ran a slight temperature every night. This disappeared after treatment by "914" and ung. hydrarg. He was kept for two years and desensitised to tuberculin by tuberculin ointment.

CASE 10, aged 17 years, was always delicate. Her abdominal glands were removed when she was 12 years of age, and four years after she was admitted to the sanatorium. Her teeth had all been removed and nothing could be noted of a specific nature. Her W.R. was strongly positive. Chest showed evidence of enlarged bronchial glands. She was given "914" and immediately had rises of temperature which compelled us to stop treatment. Any attempt at treatment by "914" led to increase in temperature which would persist for many days. She was put on ung. hydrarg. and this seemed to suit her. She gained weight steadily and went home much improved.

CASE 11.—A child of 12 years, deaf, and with interstitial keratitis and perfect Hutchinson's teeth. Her father died of pulmonary tuberculosis. W.R. is, of course, positive.

There are enlarged glands in the neck and a few crepitations on the right side of the chest, but no T.B. have been found. Treatment has only lately been instituted. Sensitiveness to tuberculin in this case is very slight.

Besides the 100 children examined I have found another most interesting case of a girl of 20, sent as a hip-joint disease (?) after partial excision of the joint. The early history is not quite clear, but in 1918 she was sent to the Royal Infirmary, Dundee, under Mr. D. M. Greig. When he saw her the right hip-joint had been opened up and was discharging freely, while the general condition of the patient was very poor. Her W.R. was positive, and she healed in a marvellous way on anti-syphilitic treatment; so quick and good was the recovery that Mr. Greig was inclined to doubt the tuberculous nature of the infection. When she came to me her serum reaction was returned as partial. She improved on mercury and again walks quite well.

Included in the 100 children I have one child with caseous glands in the neck and from whom T.B. were obtained, who might be syphilitic, although the W.R. was negative and only partial after a provocative injection. This child, 5 years of age, showed some dullness of a cornea and had a posterior synechia of the iris. The child improved on mercury and tuberculin ointment and went home well.

3. *Effect of Anti-Syphilitic Treatment.*

How far can the conditions be modified by anti-syphilitic treatment? It depends on the amount of tuberculous disease.

Case 6, where there was a big tuberculous infection, was not improved, and Case 10 seemed to be worse when the arsenical preparations were exhibited. In Case 4 treatment had to be very cautious. The other cases improved. It is necessary to proceed with caution.

I frankly admit to being afraid to use potassium iodide. It never can cure syphilis, but it may open up tissue spaces and allow the arsenical compounds a chance. It may also allow of a further and easier spread of T.B.

The percentage of cases of inherited syphilis among tuberculous children may seem small when one remembers the statements made by older writers—e.g., that children with inherited syphilis often show signs of tuberculous disease of joints. It may be that some of these cases were syphilitic only; in fact, those cases which improved with Scott's dressing probably were syphilitic only. Cases of bilateral infection of joints are always suspicious of syphilis, and cases where tuberculosis can almost certainly be excluded do not reach me.

Conclusions.

1. The case against syphilis as predisposing to a subsequent tuberculous infection is not proven.
2. Anti-syphilitic remedies must be used with caution.

I have to record my thanks to Prof. W. J. Tulloch, University College, Dundee, to whom I am indebted for the serological reactions.

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Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF COMPARATIVE MEDICINE.

A MEETING of this section was held on Nov. 26th, Prof. F. T. G. HOBDAY, the President, occupying the chair.

PUERPERAL SEPTICÆMIA IN CATTLE.

Mr. LESLIE PUGH read a communication on this subject. He said that during the last 20 years there had been little or no decrease in the incidence and morbidity of puerperal sepsis in the human being, and it had occurred to him that some facts noted in the parturition of animals might afford some light on the human problem. In the course of his practice he frequently encountered metritis which was already apparent at the birth of the calf, though at that time the mother showed no systemic symptoms. A few days later, however, there were signs of septic infection. An important fact was that in most cases of streptococcal fever the cows had not been handled by either the veterinarian or the herdsman; especially significant was this in view of the readiness, in the case of the human subject, to blame either doctor or midwife in cases of puerperal sepsis for having, by unclean methods, conveyed the infection to the mother. Mr. Pugh devoted special attention to the syndrome caused by infection with Bang's bacillus. The first sign of this was a delay in parturition. After birth at full time of an apparently normal calf there was retention of the placenta. Owing to many cattle devouring their placenta, the failure to find the placenta was not taken much note of. Within a few days there appeared a brownish-red vaginal discharge, and if at this stage no abnormality had been noticed, the further developments were serious, including evidences of a general toxæmia, and in spite of treatment at this stage death was liable to occur. If the veterinarian were called in within an hour or two of the birth, he would manually separate the placenta, giving particular attention to each cotyledon, and if this was followed by washing out with a weak antiseptic solution, recovery would probably be uneventful. From these cases organisms of the coli group had been recovered by blood cultivation; at a later stage this was overgrown by crowds of saprophytes. If there were delay in skilled treatment, the chance of success was much diminished, for streptococci would probably have dominated the field. *B. coli* infection occurred also in human cases of puerperal fever, and bacilluria in which this organism is present was frequent in pregnancy.

By what means did streptococci gain access to the region and multiply? He repeated that in cattle, normally, labour was unattended, yet coli organisms were present before labour took place, and presumably they were carried by the lymph or the blood-stream. He suggested that they found their way into the uterus through the suction action produced by the alternate contraction and relaxation of the uterus. This could be well demonstrated in the case of the cow, as when a considerable fragment of membrane protruded from the uterus it would make a 4-inch excursion to and fro. He threw out the suggestion that some such suction action in the human mother might account for the intrusion of organisms into the genital region.

Discussion.

Prof. LOUISE MCILROY agreed that there still remained an enormous gap in knowledge as to the mode of infection in these cases and the route which the virus took. *B. coli* was a most difficult organism to do research work on. The question of the invasion of putrefactive organisms was a very interesting one. She believed the majority of cases of puerperal sepsis started as a putrefactive condition due to faulty

drainage from the uterus. These patients ran an ordinary temperature for several days, and then there was a lighting up, indicating the occurrence of a secondary infection. Every effort should be made to induce the uterus to contract properly. If in the uterus there were retained debris and blood-clot and possibly retained membrane, then the putrefactive organisms entered the uterus, and it was difficult to get rid of them. An important prophylactic measure in these cases, therefore, was to prevent the fatigue of the uterus by hurrying up the delivery, and, where such fatigue was likely to occur, getting the patient into a good condition of resistance by care at antenatal clinics. There should be free drainage of the uterus, but she did not suggest, however, that there should be local interference with the uterus in acute streptococcal infection. The insertion of iodine pessaries had in her hands been very successful.

Manipulations Not a Cause of Sepsis.

With regard to direct infection of the genital canal by manipulative measures, Prof. McIlroy said that the longer she worked on obstetrics the less she believed that organisms were introduced into the genital canal by manipulative interference. This view was supported by the fact that despite the advances in aseptic and antiseptic measures and general technique during that time, the maternal mortality-rate had not been materially reduced. A further confirmation was found in the observation that when operative interference in these cases was called for, they did not necessarily go septic—indeed, the great majority ran a perfectly normal puerperium. In addition, it had been reported that though most cattle were not attended at parturition, sepsis at that period was not uncommon. It was necessary, therefore, to look for other sources of sepsis. These she regarded as three in number: lowered immunity of the patient, lacerations of the genital canal, and latent infection in the patient herself, which might coexist with the first of these. The suction action of the uterus at this time, which Mr. Pugh had mentioned, might be operative in the human subject, but it was known that even if a portion of membrane was left behind, there was not much trouble provided the uterus contracted; it was when portions protruded from the cervix that trouble ensued.

She believed that in most of the cases the toxæmia was of intestinal origin, and toxæmia caused fatigue, and hence was at the root of the uterus contracting inadequately. She knew of no hospitals where there were not cases of febrile puerperium, and she was sure there were some lacerations of the vagina and cervix which were not treated properly, because it was not easy to diagnose them. It was well known that when the general immunity was lowered, small events which ordinarily would be unnoticed, such as a whitlow or a poisoned finger-nail, produced a general septic condition which might be very grave at this time. When positive results were obtained in the search for the *B. vaginæ*, she thought vaccines should be employed. Appendicitis and pyelitis were not uncommon complications of pregnancy, and the reason they did not loom larger in the puerperium was probably that the patients had gradually rendered themselves more or less immune to them. In the human, lactic acid pessaries were found useful; the normal bacilli of the vagina generated lactic acid, and the pessaries reinforced this, or supplied a deficiency. Finally, Prof. McIlroy said she was sure the sterilisation of vulva and vagina was a very misguided form of treatment, and was quite unnecessary in normal cases. And even washing out with a weak antiseptic might remove also the protective bacilli from the region.

Dr. M. J. ROWLANDS did not agree that there had been but little reduction in the deaths from puerperal sepsis in the last 20 years; formerly the deaths from the condition were seriously frequent. Intestinal intoxication he regarded as the chief factor in lowering the general resistance, and with the exception of *B. coli* he thought infection in the cases under discussion must be sought from outside the body. The policy of non-interference during the human puerperium was taught to him by Dr. Herbert Spencer, and he was sure it was the sound one.

Dr. REMINGTON HOBBS said he had seen several cases of puerperal sepsis which had been due to *B. coli*, but in the cervical smears he found staphylococci and streptococci also. Dr. Robert Donaldson examined for him 100 cases of urine from pregnant women, and in 23 it contained *B. coli*. The use of potassium citrate and sterilised glycerine locally obviated puerperal sepsis in all of them. Coli infection of the urinary tract was practically always accompanied at the puerperium by infection of the genital tract by the organism, hence the need for especial cleanliness.

Prof. ALFRED WILD spoke from a long experience in bovine practice. He found that cows which yielded milk were usually well looked after, but parturient cows were neglected and left largely to take care of themselves. Hence their hind quarters were in a very neglected state, and the entry of *B. coli* was a very easy matter. In treating these cases he advocated irrigation of the uterus by a very mild antiseptic, followed by introducing the hand and rotating the uterus, which manœuvre would usually start it contracting.

Dr. ADRIAN STOKES said he did not think the protective capacity of the cow was abolished by parturition. In many cases he had found streptococci in the lochia, and yet puerperal sepsis was not manifest. A woman who normally carried these organisms seemed to immunise herself, and was able to compete with the streptococci as they grew in her lochia. There was sound reason against the employment of strong antiseptic solutions. They did not reach all the organisms, especially those in crypts, and even if some were killed off, many remained, and they quickly multiplied to formidable proportions again. Moreover, A. Fleming had shown that antiseptics damaged the leucocytes, and hence seriously lowered the individual's bactericidal powers.

Prof. WOODRUFF (Australia) said the bacillus of contagious abortion was the commonest cause of the retention of the fœtal membrane. In Australia no calf-boxes for the cow nor foal-boxes for the mare were used; parturition took place in the dry open air and sunshine, and pathological conditions of the uterus in those animals were very rare in that country. He spoke highly of the results of using lactic acid in cystitis and in cases where puerperal infection was likely to occur.

Mr. W. E. LITTLE agreed that the contagious abortion bacillus was far the commonest cause of retention of fœtal membranes in cattle. He had had best results from flushing the uterus with normal saline.

The PRESIDENT spoke of the various shapes of uterus in different animals. In the mare, the placental membrane should be removed as soon as possible. In the cow, the membranes were left until they were ready to come away of themselves. If they were removed too quickly, laceration was very liable to occur, followed by septic metritis. In the case of the cat, the dog, and the sow, care had to be taken not to leave behind any placental membrane of any of the fœtuses. For years the practice had been to induce their removal by syringing, but only with very weak solutions, such as dilute permanganate of potash, or peroxide of hydrogen, or normal saline.

Mr. PUGH briefly replied.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

EXHIBITION OF CASES AND SPECIMENS.

THE Society opened its fourth session on Nov. 28th, under the presidency of Colonel L. W. HARRISON.

Syphilitic Œdema of Lip and Nose.

Dr. DENNIS VINRACE showed a man, aged 41, who 20 years ago had syphilis, for which he had been

treated at various places. He came to the exhibitor with severe œdema of the upper lip, with much irritation of that and the lower lip and nose. The lips were also fissured, and the tongue enlarged, infiltrated, and leucoplakic. The Wassermann test was strongly positive. Dr. Vinrace had treated him solely on 0·2 g. doses of bismuthyl, and the patient said this had given him more benefit than any other method. In five months his weight had increased by 24 lb.

Dr. DAVID LEES drew attention to the man's septic denture, and suggested its abandonment. He advised careful watching of the patient's condition, owing to the tendency of bismuth preparations to cause kidney trouble. A period of substitution of salvarsan for bismuthyl might be beneficial.—Dr. MARGARET RORKE said she had seen very acute and persistent tongue and lip cracks clear up well under colloidal sulphur and under intramin.—Dr. B. B. SHARP considered the removal of the septic mouth focus as the main need in the treatment of the case.

Dr. VINRACE also showed a man, aged 42, with a tuberculide of the face which was clearing up under CO_2 snow. Though the complement-fixation test for tubercle was negative—as also was the Wassermann—and there was no family history of tuberculosis, he still considered it tuberculide.

Persistent Infective Hypertrophy of Labium.

Dr. RORKE showed a young woman who attended hospital a month ago with acute œdema of the labium majus, probably syphilitic. She was doing very well on ordinary treatment, as very little rash remained, but the hypertrophy of the labium would probably persist.

Dr. T. ANWYL DAVIES said he had known cases of similar hypertrophy due to syphilis persist after the acute stage had passed.

Gonococcal Periostitis of Tibia.

Mr. V. E. LLOYD exhibited a man presenting what was regarded as gonococcal periostitis of the tibia. The patient was infected with gonorrhœa in March, 1923, and a month later had acute prostatitis. Two months later all the symptoms had subsided, the prostate seemed of normal size, and its secretion was normal. Last March, however, there was a slight return of the discharge, though the prostate and its secretion were then normal. There was at this date a complaint of pain in the centre of the left calf. Treatment with vaccines had very little effect. A skiagram taken two months ago showed a small periosteal node on the outer aspect of the upper end of the tibia. Wassermann was negative. Considerable improvement had followed the recent use of a gonococcal and mixed vaccine.

Dr. LEES inclined to the view that this was a congenital syphilitic condition; there was what seemed to be a syphilitic periostitis all along the tibia.

The PRESIDENT remarked that the Wassermann test being negative did not exclude syphilis.

A Case for Diagnosis.

Dr. LEES showed a man, aged 53, who came with a condition of knee, ankle, and wrist joints, the nature of which seemed obscure. Twenty years ago the man had gonorrhœa, and in the following three years he had two recurrences. Two years later he had arthritis in the joints named, and 12 and four years ago respectively he had synovitis of knees. There was no history of syphilis, and Wassermann was negative. On admission to hospital there was no palpable enlargement of the prostate, but the left vesicle was slightly indurated and nodular. There was neither frequency nor urgency of micturition, and the complement-fixation test for gonorrhœa was negative. There was heavy albuminuria, and the urine contained some coliform bacilli. The joints resembled Charcot joints in appearance; there was some choroiditis with commencing optic atrophy in both eyes; hence it might be that condition.

A Curious Tongue Condition.

Dr. G. B. DOWLING presented a man, aged 15, who noticed, nine years ago, a small growth in the left lateral aspect of the tongue, and a similar lesion occurred later on the other side. Then followed small masses on the dorsum of the tongue, and they had gradually increased in size. The masses were in the form of a wedge pointing anteriorly, and the consistence was that of indiarubber. His difficulty was in deciding whether the condition was a tertiary, deep sclerous glossitis of the tongue, or some non-syphilitic condition. He inclined to believe it was median rhomboidal glossitis, which was first described in 1914 by Brocq. Wassermann was negative, and there was no history of syphilitic infection.

Dr. WILFRID FOX said this tongue did not present the translucent, opalescent aspect usual in tertiary superficial glossitis. The most important element in this case was the septic one; his septic teeth should be removed. It would be of much assistance if a small piece of tongue could be examined microscopically.—The PRESIDENT referred to a tongue case, regarded as syphilitic, and so treated, which was later proved to be columnar-celled carcinoma.

Pleurisy Clearing Up During Syphilis.

Major A. T. FROST described the case of a man who came for treatment of a syphilitic sore and rash while suffering acute pleurisy. Six hours after the first antisyphilitic injection there was a pronounced exacerbation of the pleurisy, and it was gone next morning. There had been no treatment of any kind before the one injection.

Colonel Harrison was unanimously re-elected as President at the meeting.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

A CLINICAL meeting of this Society was held in the Medical Out-Patient Department of the Royal Infirmary, Edinburgh, on Nov. 19th, Sir DAVID WALLACE being in the chair.

Exhibition of Cases and Specimens.

Mr. QUARRY WOOD showed two cases: (*a*) *Sarcoma of the proximal end of the humerus.* The patient gave a history of swelling of the shoulder of six weeks' duration, which gradually increased. X ray examination showed a sarcoma to be present. The arm was removed by the interscapulo-thoracic amputation, the posterior method of Littlewood being employed. It was pointed out that this method had the advantage that the shoulder fell away easily, leaving the large vessels standing out in such a way that they could be easily dealt with. Also by this method the position of the patient had not to be changed during the operation. The patient made a good recovery, and was discharged on the fifteenth day. (*b*) *Carcinoma of the rectum.* The case was of about a year's duration in a man aged 56. The growth was movable and favourable for excision. A preliminary operation was first performed, at which colostomy was carried out; at this time the mass was found to be free and without secondary growths. The anæsthetic in this case was of note—a "twilight sleep" combined with spinal anæsthesia. At the second operation, when a radical operation was performed, the patient was in a perfectly natural sleep. There was little post-operative shock, and the patient made a good recovery.

Sir HAROLD STILES showed two cases of *hypertrophic tuberculosis of the ileo-cæcal region.* The first was of a girl who had had an anastomosis of the ileum and transverse colon performed four months previously for symptoms of chronic obstruction. She was

readmitted to hospital with abdominal pain and vomiting, and was found to have a mass in the cæcal region. This was diagnosed as tuberculous, in spite of the absence of the usual symptoms, and proved to be such at the operation. The second case was similar, and had been operated on five years ago. There was some post-operative trouble, due to the wound breaking down and a sinus developing. This was dealt with, and the patient had resumed her work on a farm. The case was probably of bovine origin. A third case showed a rare condition, that of *tuberculosis of the thyroid gland*. The patient was a boy aged 17, who complained of hoarseness and difficulty in swallowing. The thyroid gland was obviously enlarged, indurated, nodular, and fixed, and caused pressure on the trachea. The tumour was thought to be a sarcoma, and a decompression was performed. The case, however, turned out to be a tuberculous condition affecting the trachea. The wound healed well and the patient recovered.

Prof. G. LOVELL GULLAND showed a case of *pellagra*, and commenced with a short description of the condition, saying that it was often caused by consumption of protein which had not the full biological value. The case dated from a trade strike, when the patient, a woman, had lived entirely on bread and margarine. She showed mental depression, a scaly rash, bronzing of exposed parts, and gastro-intestinal disturbance. She was at first put on a milk diet alone, then on as generous a diet as possible, with meat. The patient was very markedly improved, but the diet had to be watched in spring to avoid the seasonal recurrence that so often took place in this condition.

Mr. A. A. SCOT SKIRVING showed two cases: (*a*) *Marked depressed fracture of the occipital bone and effusion of cerebro-spinal fluid under the scalp.* The condition, in a youth, was the result of a machinery accident, and had previously been shown to the Society. There had been marked effusion of cerebro-spinal fluid, which had prevented trephining and raising the bone. The patient had been under treatment for 11 months and had been tapped four times. The first time a tumblerful of cerebro-spinal fluid was removed; the last time a tablespoonful was removed. The fluid had always been perfectly clear and without a tinge of blood. There was no further necessity to tap. (*b*) *Removal of a hatpin from the second part of the duodenum.* The patient, a girl aged 3 years, was X rayed and the pin, about 2 inches in length, was seen in the stomach. On operation the pin was found to have passed on into the duodenum and to have perforated the wall, the point being embedded in the right kidney. Attempts to pass the pin back into the stomach were fruitless, and the pin was removed from the duodenum. If dealing with a similar case in future Mr. Scot Skirving said the simplest method would be to draw the pin out as far as possible, cut the pin with pliers near the head, letting this take care of itself, and pass on down the alimentary canal, and by removing the dangerous shaft of the pin an incision into the gut would be avoided.

Mr. J. N. J. HARTLEY showed two cases: (*a*) *Periosteal sarcoma of the head of the fibula.* The patient, a miner, aged 21, complained of a swelling in the region of the head of the left fibula. His attention had been drawn to it three months previously by a slight twinge of pain. The tumour was about the size of a tangerine orange, firm and painless. A radiogram showed osteoporosis of the head of the fibula and radiating striæ characteristic of periosteal sarcoma. A supracondylar amputation was performed. An interesting feature in this case was that the patient happened to be a school friend of a patient whom Mr. Chiene demonstrated at the same meeting, and who had a tumour almost identical in character and in the same situation. The two patients were of the same age and lived in the same district. (*b*) *Late cerebral clot after an accident.* The patient, a man aged 52, had had a cycle accident and was admitted to hospital unconscious, with concussion. Consciousness was regained on the third day, and the patient was apparently making a satisfactory recovery. On the tenth day he complained of headache, became drowsy and apathetic, and later had mild seizures, affecting the hand, face, and leg. The following morning a severe seizure spread over the whole body, he became unconscious, and his left side was completely paralysed. A right temporal exploration revealed a subdural clot extending over the cortex throughout the area exposed in the temporal fossa. Following the operation the patient improved and had recovered.

Mr. J. W. STRUTHERS showed a case of *recurrent lipoma of the thigh.* The case was of a man aged 60. The tumour had been operated on five times and had again grown. It was suspected that the fatty tumour had undergone changes, and assumed a sarcomatous form, a very rare occurrence.

Dr. JOHN EASON showed a case of *lead poisoning with cyanosis due to sulphæmoglobinæmia.* The patient had developed an undoubted lead poisoning after working with an acetylene burner, cutting the plates of a ship. The interesting point in the case was that in treatment cyanosis developed which proved, on spectroscopic examination, to be due to sulphæmoglobinæmia. Dr. Eason said that these cases had only been described in literature by two observers, and that the condition was much more common than was usually supposed. The diagnosis could be made by the simple procedure of diluting the blood to 1 in 20 and looking for the characteristic spectroscopic band.

Dr. W. T. RITCHIE showed two cases: (*a*) *Erb's paralysis.* The patient was struck on the shoulder during the war by a falling sandbag. Recently he was admitted to hospital suffering from lead poisoning. The case showed marked lessening in circumference of the right forearm, especially in the brachio-radialis and trapezius. There was also anæsthesia in the flexor surface of the forearm. There was loss or reduction of response to faradism in the affected muscles, but no complete reaction of degeneration. (*b*) *Acromegaly.* The condition was well marked in a man of 28, who had for long been under observation. The condition was first noticed at the age of 11, and showed signs of excessive secretion of the pituitary. Recently the case had changed to one of hypopituitarism, but so far without distressing symptoms.

Mr. PIRIE WATSON showed two pathological specimens: (*a*) *Melanotic sarcoma of the great toe nail.* This occurred in a woman aged 49, and gave rise to secondary growths in the groin. The toe and glands were removed, and showed the characteristics of a melanotic growth. (*b*) *Omental cyst of unusual size.* Taken from a man of 68, this tumour was of very large dimensions and filled the whole abdomen. Microscopically it proved to be a malignant endothelioma, but this change had probably only supervened recently, the original growth being an omental cyst.

Dr. R. A. FLEMING showed a case of *neuro-fibromatosis* occurring in a labourer aged 60. There was a wide and symmetrical distribution of tumours, involving the fifth cranial nerves and cutaneous nerves of the scalp, the cutaneous nerves of both arms and thighs, and the intercostal nerves. There were no nodules below the knees and none on the hands. The patient complained of tingling and pain along the nerves involved, but sensation to touch, heat, and cold was unaffected. Some nodules were sessile, others pedunculated.

Mr. DOUGLAS GUTHRIE showed a case of *total laryngectomy.* The patient, a man aged 35, had been gassed in 1918, and complained of hoarseness ever since. Laryngoscopy this year showed the left arytenoid and ventricular band much swollen and almost occluding the larynx. Tubercle and syphilis having been excluded, tracheotomy was performed and a portion of the growth removed. The growth was found to be one of epithelioma, and at a second operation a complete excision of the larynx and the left lobe of the thyroid was performed. The patient was doing well, and had quite an audible "pharyngeal" voice.

Mr. GEORGE CHIENE showed two cases: (*a*) *Elephantiasis of the left leg and scrotum.* The patient was a male aged 18. The leg had been operated on previously and had greatly improved, the scrotum was still very large, and the patient was desirous of further treatment. The origin of the condition was unknown, the patient never having been abroad. (*b*) *Sarcoma of the upper end of the fibula.* The condition first troubled the patient, a man of 21, by causing pain in the back of the leg; two months later a swelling was noticed. The patient was admitted four months from the commencement of symptoms. Sarcoma was diagnosed from X ray appearances, and the leg was amputated through the thigh. (See Mr. Hartley's case.)

Sir NORMAN WALKER showed several cases illustrating *treatment of lupus by arc-lamps*—the "artificial sunshine" method. All cases showed marked improvement, and the minimum amount of scarring without contracture was demonstrated. A case of tuberculosis of the larynx similarly treated and showing marked improvement was described.

Mr. J. J. M. SHAW showed three cases: (*a*) *Adenocarcinoma of the pelvic colon.* The patient, a man of 71, had previously suffered from signs of subacute intestinal obstruction, followed by apparent spontaneous recovery, this two years ago, and recent onset of acute peritonitis. The growth had been removed by a two-stage operation. (*b*) *Laparotomy for acute intestinal obstruction* due to volvulus of the ascending colon in a man aged 30. (*c*) *Shrapnel wound* of the thigh sustained in a man aged 28. The wound was received in 1918, and was now causing pain. Radiographic examination showed nine and a half sewing needles in the affected part of the thigh. At the time he was wounded he was carrying a packet of needles in a case in his trouser pocket, and these had apparently been carried in with the bullet.

Dr. J. D. COMRIE showed two cases: (*a*) *Disseminated sclerosis with mental changes.* Patient was a man of 33 years who had suffered from numbness of the feet for ten years, then unsteadiness and spasticity of gait, and later tremors of the hand and occasional dysuria. The plantar reflexes were extensor; the optic discs pallid. For the past two months he has been lacking in concentration, with progressive mental deterioration. (*b*) *Dementia præcox of rapid onset.* A girl, aged 19, had been rather listless for two or three weeks, when one day when at work she behaved strangely, laughing and crying without reason. Three days after this she was apprehensive, did not answer questions, smiled vacantly, had delusions of sight and hearing, and was at times katatonic.

Mr. FRANK E. JARDINE showed a case of *retroperitoneal hernia.* A boy, aged 13, was admitted to hospital as a case of "acute abdomen," and on examination there was found to be a tumour just under the right costal margin; this, after consideration of the symptoms and position, was diagnosed as a retroperitoneal hernia, which was confirmed at operation. Twenty-eight inches of gangrenous small intestine was found in the sac and had to be resected. Of interest in this case is that a sarcomatous tumour was found in the resected intestine, and this might have caused the hernia.

Dr. CHARLES MCNEIL showed two cases: (*a*) *Congenital pyloric stenosis.* The condition occurred in a breast-fed male infant first seen when 4 weeks old. Typical symptoms and signs were present. Stomach lavage was carried out twice daily, breast-feeding being continued. There was fairly steady improvement, with a gain of 4½ lb. in three months. Gastric peristalsis was still visible at the time of showing. (*b*) *Interlobar empyema*, with aspiration and recovery. The patient, a boy of 8 years, had dullness confined to the right axilla; he was tapped several times unsuccessfully, but eventually 3 oz. of pus was withdrawn from a needle in the mid-axilla in the third interspace. Subsequently there was steady improvement, controlled by radiograms and leucocyte counts.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

A MEETING of this section was held in the Royal College of Physicians, Dublin, on Nov. 21st, Dr. F. C. PURSER, the President, being in the chair.

The PRESIDENT read a paper on

Sequelæ of Encephalitis Lethargica,

and cases showing sequelæ of encephalitis lethargica were shown by the President, Dr. L. ABRAHAMSON, Dr. A. R. PARSONS, Dr. G. E. NESBITT, and Dr. J. F. O'CARROLL.

The President said that the most constant and, perhaps, the most distressing after-effects of encephalitis were mental. Some writers said that 95 per cent. of cases showed mental sequelæ, and many put the figure at 70 per cent. He would be inclined to adopt the lower figure. The type and severity of the initial symptoms made a great difference to the subsequent mental condition. Patients with marked lethargy and coma were far more prone to mental sequelæ than those who were sleepless or delirious, or even maniacal, in the acute stage. The age of the patient, too, made a great difference. The young, under 12, were likely to suffer most. Mental deficiency and insanity were frequently recorded as sequelæ. Most of the physical sequelæ were residua of conditions characterising the acute stage. Of these some form of ocular abnormality was the commonest. Unlike the age-incidence of mental sequelæ, children were far less liable to these residua than adults. Most cases occurred between the ages of 15 and 40. In general, physical residua, with the exception of the Parkinsonian syndrome, tended to abate as time went on. This was especially so with ocular paralyses. There was, however, much reason to fear that physical symptoms which followed an acute attack after an interval of some months, and which were not merely residua persisting from an acute attack, tended to progress rather rapidly. Involuntary movements were said to occur in 15 per cent. of cases. The form of the movements varied greatly. Some resembled Sydenham's chorea so closely that no difference could be detected between the two conditions. Hemiplegia, or less extensive paralyses showing involvement of the pyramidal tract, was not infrequently met with. Sensory residua were indefinite. Pains, lasting some weeks, and possibly attributable to lesion of a posterior nerve-root, might occur. Obesity was an unusual sequel of encephalitis, but it seemed to be the most common trophic change following an acute attack. Finally, the Parkinsonian syndrome was, next to ocular paralysis, the most common sequel of acute encephalitis. It was computed that about one quarter of acute non-fatal cases ended in this tragedy.

The post-encephalitis Parkinsonian syndrome differed from typical paralysis agitans in many particulars which, apart from the patient's history of previous illness and other residua of encephalitis which might be present, made a differential diagnosis easy. The differences were ætiological and clinical, whereas paralysis agitans proper commenced after 45, and was commoner in men than in women; the post-encephalitic condition resembling it occurred at any age, from 15 to 40 years usually, and women were at least as frequently affected as men. Further, compared with true paralysis agitans, the condition was steadily and rapidly progressive.

The President then described in detail the clinical differences between true paralysis agitans and the post-encephalitic condition, and showed a case of the latter.

Dr. LEONARD ABRAHAMSON presented two patients with sequelæ:

(*a*) A boy, aged 11, who had suffered in March, 1924, from an attack of encephalitis with abdominal myoclonus. This myoclonus was still present. It varied in intensity and the contractions were often more forcible than those noted during the acute attack. The boy showed in addition great irritability, change in disposition, insomnia, and habit of

holding in his breath. (*b*) A girl, aged 19, who had experienced in April, 1924, an attack of encephalitis characterised by ocular paralysis, insomnia, and delirium. She now suffered from delusions about her food, which she thought was poisoned. She also complained of the habit of yawning frequently. At times during the yawn her mouth remained open and she was unable to finish the yawn until some time had elapsed. Another habit developed was that of frequently taking deep breaths. Insomnia was present and towards evening she showed restlessness of the left foot, which moved continuously during the night.

Dr. Abrahamson referred to the variation in the incidence of the sequelæ of encephalitis after the different outbreaks. The Parkinsonian syndrome seemed to be much commoner after the last epidemic than after previous epidemics. He pointed out that in some cases the syndrome was whittled down to one or two symptoms. He discussed the changes in character noted in children, and referred to a child who developed marked kleptomania. In his experience sequelæ occurred in about 50 per cent. of patients. In a few cases recrudescences occurred indicating that the virus could remain in the system for long periods.

Dr. J. SPEARES referred to the difficulty of diagnosing cases of encephalitis lethargica at first sight. The drug he had found most useful was luminal, starting with ½ gr. doses, and increasing to 2 gr. doses. He asked if exophthalmos had ever been seen as a result of the disease.

Dr. ALFRED R. PARSONS referred to the frequency of restlessness in cases of sequelæ of encephalitis lethargica, both nocturnal and in the day-time.

Dr. T. G. MOORHEAD referred to a case which he had recently seen, and which displayed in a striking manner the Fröhlich syndrome.

The patient, a girl, aged 23, employed at clerical work, who had suffered from a mild attack of encephalitis lethargica in January last. Since then she had been mentally dull and listless, and she now presented a typical Parkinsonian appearance. In addition, however, she showed an extraordinary adiposity, affecting the entire body, but more especially the mammary glands and the hips. There was complete amenorrhœa, and an almost complete disappearance of pubic hair.

The condition was most likely due to involvement of the pituitary gland. He also referred to the possible value of psychotherapy in the nocturnal restlessness of children. Of the various drugs used for myoclonic spasm he had found hyoscine by far the most useful, but it was necessary to give it in fairly big doses.

Dr. NESBITT drew attention to the fact that the Parkinsonian syndrome frequently occurred in the acute stage of encephalitis lethargica as well as in the later stage, and to the frequency of mental deterioration in these cases. In the case that he had shown that evening he had given doses of influenza vaccine for a considerable time without much result.

Dr. V. M. SYNGE asked what dose of hyoscine should be given. In one American journal recently he had seen a statement by some observers who had got excellent results from the use of hyoscine; some bad cases had got well enough to go back to work and others had shown a great improvement. The dose given was one-fiftieth of a grain four times daily, and in some cases one-hundredth of a grain four times daily.

The PRESIDENT, in replying, said that he thought the Parkinsonian syndrome occurred in 50 per cent. of cases, and in nearly every case the face was affected. He had not found luminal of any use, and hyoscine even in small doses had seemed to him to make the patients delirious, and although he had found that in cases of paralysis agitans it had stopped the tremor for a time, he had not given it in cases of encephalitis lethargica. He did not understand how exophthalmos could arise as a sequela of the disease. The onset of bulbar symptoms was not at all uncommon. Regarding adiposity, Duncan had mentioned the Fröhlich syndrome occurring in a boy aged about 14 who was recovering from encephalitis lethargica. He was of opinion that the Parkinsonian syndrome far more frequently came on in the acute stage of encephalitis lethargica than in the later stage.

Dr. F. S. BOURKE read a note on a case of picric acid dermatitis.

Reviews and Notices of Books.

THE NERVOUS PATIENT.

By MILLAIS CULPIN, M.D. Lond., F.R.C.S. Eng., Lecturer on Psychoneuroses to the London Hospital Medical College. London: H. K. Lewis. 1924. Pp. 305. 10*s.* 6*d.*

THE practitioner who attempts to keep pace with current developments in scientific research and modern treatment is faced with peculiar, if not insuperable, difficulties when he tries to assimilate the material dealing with that class of patient generally known as "neurotic." In the first place, the needs of the individual who has failed to adapt himself to his environment are so intimately bound up with religious, moral, and social considerations that the physician who would heal a disability of psychogenic origin must be both fitted and willing to take upon himself something of the rôle of priest and pedagogue. Moreover, the ingenuities of the neurotic's attempts to twine himself around any prop that offers are so subtle that the physician or friend who tries to help him, unless especially qualified to do so, may run less risk of disaster for both by a refusal to face the real issue and hiding behind some simple physical theory of causation.

Nevertheless, it is certain that the practitioner with common sense and a real knowledge of things as they are, is able to do an inestimable amount towards preventing and curing the minor disabilities which lie at the root of so great a percentage of our physical and social ill-health. It is now recognised that the symptom which appears in the consulting-room does not result in a direct manner from a simple cause. Treatment on a "physical" theory of causation may do no more than chop a leaf from the stem of a flowering weed, but an over-enthusiastic concentration on the psychological factors may well result in an excavation around the supposed site of the rootlets which uproots wheat as well as weeds. Only a patient and highly skilled tracing of the fibres from flower to stem and from stem to rootlets can ever remove the weed completely, and this is scarcely within the compass of the practitioner. He must usually be content with an attack at some level of the stem which will remove the flower temporarily or permanently according to the shrewdness and comprehension with which the blow is directed. An understanding of the anatomy of the plant will indubitably help his aim. For the practitioner who has little or no idea of the possible underground connexions of common symptoms, Dr. Millais Culpin's book should come as a flood of light in a dark place. He has made a courageous attempt to meet a difficult position. To convey to the non-specialist worker the gist of specialist work which is still in a tentative stage of development is always a delicate task; Dr. Culpin has succeeded in presenting, with a refreshing degree of common sense and humour, a bird's-eye view of the psychogenic possibilities behind the many physical conditions that fill our waiting-rooms, as well as some helpful chapters on the "neurotic" conditions proper, which he prefers to term the "minor psychoses."

He pursues the wise course of defining terms before embarking on their usage, and has enhanced the value of his book to the busy man by providing a copious index in chapter (1) entitled Classification and Nomenclature. Other chapter headings are as follows: (2) The Position of Psycho-Analysis; (3) Suppression and Repression: Suggestion; (4) Physical Relationships of the Minor Psychoses; (5) Hysteria; (6) Bodily Symptoms commonly called Hysterical; (7) Anxiety and Obsessional States; (8) General Principles of Diagnosis; (9) The Examination of the Patient; (10) Asthma and Allied Conditions; (11) Exophthalmic Goitre: Stammer, Epilepsy, and Hysterical Fits; (12) Gynæcological Conditions; (13) Conditions Arising After Trauma or in Relation

to Occupation: Head Injuries; (14) Postural Deformities: Digestive Disturbances: The Heart Neurosis; (15) The Psychological Aspect of the Effort Syndrome. The panorama is completed by chapter (16) on "Eye Symptoms," by Mr. W. S. Inman, and chapter (17) on the "Major Psychoses" from the point of view of the practitioner, by Dr. Stanford Read, while the last two chapters deal directly and indirectly with treatment.

The section on treatment is rather vague, but the difficulties of the task which the author has set himself in his comprehensive scheme are so great that we may congratulate him on the general measure of success he has achieved. We advise all practitioners to read this handy little book.

ARTIFICIAL SUNLIGHT AND ITS THERAPEUTIC USES.

By FRANCIS HOWARD HUMPHRIS, M.D. Brux., F.R.C.P. Edin., D.M.R. & E. Camb., Consulting X Ray Physician to the American Hospital in London. London: Oxford Medical Publications. 1924. Pp. 164.

THE use of natural sunlight in the treatment of surgical tuberculosis and other diseases has obtained results so satisfactory as to stimulate a great deal of research in actinotherapy, since it would obviously be of advantage to have an adequate supply of a synthetic substitute for those rays which Nature supplies in so fitful and uncertain a manner, especially in climates such as that of the British Isles.

In the little volume under consideration Dr. Humphris covers the whole field of the history, production, and uses of artificial sunlight. His clear, concise description of the properties and production of ultra-violet light demands from the reader only a rudimentary knowledge of physics. A necessary warning is given against the little high-frequency electrode machines which not infrequently masquerade as "ultra-violet ray apparatus" in hairdressers' shops and elsewhere; ultra-violet rays will not pass through glass, wherefore any effect these bulbs may have will not be due to ultra-violet light. Dr. Humphris has done wisely in confining descriptions of apparatus to the case of a few tried models. A brief review of present knowledge concerning the mode of action of light is well up to date. Administrative technique is discussed in some detail. The dose is measured by the degree of erythema (1–4) produced; for the removal of a nævus, for instance, one must produce an erythema of the fourth degree (that is to say, a blister), whereas in tuberculosis, especially of the pulmonary variety, much smaller doses are needed. The number of diseases in which artificial sunlight appears to have been applied with benefit is very great, the list including such dissimilar complaints as hay fever, alopecia areata, and enlarged prostate. In a final chapter Dr. Humphris discusses the use of X rays as a complement to actinotherapy, and concludes that the two can safely be combined, and that in many cases the X rays definitely assist the therapeutic action of ultra-violet light.

It is to be hoped that facilities for obtaining artificial sunlight treatment will increase rapidly, especially in centres where rickets and tubercle are rife. Any medical man wanting a brief but comprehensive sketch of this subject could not do better than to make use of Dr. Humphris's excellent little book.

A TEXT-BOOK OF HISTOLOGY.

Third edition. By HARVEY ERNEST JORDAN, A.M., Ph.D., Professor of Histology and Embryology, University of Virginia. London and Philadelphia: D. Appleton and Co. 1924. Pp. 857. 25*s*.

THIS edition of Prof. Jordan's popular text-book differs little from previous ones. The book is peculiarly suitable for medical students because of the large number of illustrations it contains of preparations made from human tissue. It is disappointing, therefore, to find that the pig's liver still holds pride of place in the description of this organ, for it is difficult for the student to gain from it any true idea of the relation between the structure of the liver and its function. An even more serious blemish is the omission of any reference to Bj. Vimtrup's corroboration of Ch. Rouget's important work on the structure of capillaries. There are a few new illustrations, among them one from the heart of the "Beef." The ugly, yellow-tinted figures have no advantages over half-tones and might well be replaced.

INSULIN THERAPY.

Zur Einführung in die Insulintherapie des Diabetes Mellitus. Von H. STAUB, First Assistant der Medizinischen Klinik, Basel. Berlin: Julius Springer. 1924. Pp. 106.

ALTHOUGH the author desires that his work should be considered as only an introduction to the use of insulin, and not as a monograph, the book is in some ways the most complete which has been published. It is divided into three parts. Part I. consists solely of an excellent account, with references, of all the work which had been done in the attempt to discover insulin, and will be of use to anyone who wishes to refer to the full story. Part II. contains a good account of the discovery of insulin and of its properties, but does not add fresh information. Part III. describes the different methods of using insulin, with references to innumerable papers. The ideals of the author are to keep the blood-sugar normal, as well as the urine sugar-free, in order to allow the islands of Langerhans to have a chance of recovering their function. If no blood-sugar estimation can be made, he considers it safer to allow a little sugar to be present in the urine. The changes which take place in the various mineral constituents of the blood of a patient with diabetic coma after a large dose of insulin are very interesting. The inorganic phosphates are decreased, but the Na, K, Mg, and Ca all increased. The great influence of various infections is emphasised. The index and references are very thoroughly and carefully edited.

A TEXT-BOOK OF PHYSIOLOGY.

By H. E. ROAF, M.D., D.Sc., M.R.C.S., Professor of Physiology at the London Hospital Medical College, University of London. London: Edward Arnold and Co. 1924. Pp. 605. 25*s*.

THIS student's text-book should prove a great boon to the serious-minded students of medicine, and will doubtless become very popular among them. Physiology is treated in an original manner, and the student is gradually introduced to the more difficult parts of the subject. The book is up-to-date, well arranged, splendidly illustrated, and altogether a work for congratulation. A criticism might be made that there is, perhaps, a little too much chemistry and physical chemistry about it. But at a time when these subjects are finding such extensive applications to medical problems, it is, perhaps, just as well to include those parts of them which bear some relation to physiology. We are glad to see that the author has included some account of histology.

INDIVIDUAL PSYCHOLOGY.

By ALFRED ADLER (Vienna). Translated by P. RADIN, Ph.D., Associate Professor of Anthropology at California University. London: Kegan Paul. 1924. Pp. 352. 18*s*.

Dr. Adler has claimed the title of "Individual Psychology" for his well-known theory of disturbed mental processes, though it is unlikely that the law of priority would support his claim. The theory is simple. Thwarted ambition or a sense of organic

inferiority finds a spurious satisfaction through the neurotic symptom, and the "will to power," with its variant the "masculine protest" of the woman or weakly man, is made the basis of all the neuroses and some at least of the psychoses. Most psycho-pathologists agree that the neurotic symptom has not only a cause but an aim, and that the explanation of the aim is to be found in the dispositions, infantile or other, of the patient, but it is doubtful whether this aim can be usefully brought under an exclusive conception such as Adler provides. Nervous insomnia, for example, is an "arrangement" by which the patients demand that they be spared certain work and are able to force their own will upon other people (p. 165). Such simplicity is attractive till we find the same pathology applied to melancholiacs, who by their behaviour "become the centre of attention of their limited circle and are able to induce those individuals who feel obligated to help them to increased activity, to noteworthy sacrifices on their behalf, and always to make advances to them" (p. 249). When we read, too, that "A cure will take place . . . . as soon as he [the melancholiac] has enjoyed the satisfaction of having demonstrated his superiority" (p. 252), we seem to be in presence of a superficiality of observation surprising in what is described on the wrapper as "the Classic of Individual Psychology." These dicta concerning melancholia are not set out tentatively, but appear under the heading of "Individual Psychological Results obtained from a Study of Psychoses." They are in conformity with the general character of the book, which seems to have been written with an impetuosity indicated on p. 349, where the author says: "I am quite at sea as to what can be done in an age of intensified demoralisation like ours. The correct and proper thing is clearly to act immediately." This, however, is the only glimpse the author gives of any doubts he may have; the assertive manner which begins in the preface and is continued throughout will be regretted by those who believe that Adler's theory presents an aspect that exists in many neurotic disorders and must be studied in conjunction with other aspects.

COLONIC THERAPY IN THE TREATMENT OF DISEASE.

By O. BOTO SCHELLBERG. New York: American Institute of Medicine, Inc. 1923. Pp. 202.

THE nature of this book is such as to induce caution on the part of the reviewer. Its title-page gives no clue as to the qualifications of its author, its publishers are an "Institute," which at first sight appears to be connected with the more commercial aspects of our profession. At the same time, the volume is well written, well illustrated, and supplied with a brief but authoritative series of references. The book is a plea for the treatment of many diseases by a very thorough and complicated system of colonic irrigation, the results claimed being, if not extravagant, at least sufficiently startling to make the sceptical reader demand further proofs before accepting them. The author, after quoting at great length from Dr. Robert Hutchison's masterly address on the "Chronic Abdomen," claims that, in such cases, "had the cæcum been reached and treated as it should be, every symptom he describes with such exquisite precision would have disappeared." The book is interesting, but we remain unconvinced.

THERAPEUTICS.

Traité élémentaire de clinique thérapeutique. Eleventh edition. By Dr. GASTON LYON, Ancien Chef de Clinique Médicale à la Faculté de Médecine de Paris. Paris: Masson et Cie. 1924. Pp. 1406. Fr.85.

THIS is a text-book of medicine with a strong leaning to treatment. What the writer has to say about the diseases themselves is generally in small print; the treatment is in more prominent type. It is thus easy for the reader to determine whether he will study the disease as a whole or will merely cull the treatment. This edition is, as the advertisement of the book says, *entièrement refondue;* it is, as a matter of fact, well purged of old material, for it is some 400 pages shorter than the last edition, but it is quite up to date in recent work. The use of bismuth in syphilis, of insulin in diabetes, both receive good notice. That field of treatment to which anaphylaxis and the use of colloids enter, a field of which the final value is still so difficult to gauge, is well covered. The placing together in this section of treatment of shock and treatment by shock provides an instance of the subtle contrast which is so dear to the French mind. This book maintains the position it has formerly gained of being a first-class one for the practitioner who wants to keep level with the ever-advancing wave of treatment.

DISLOCATIONS AND JOINT FRACTURES.

Second edition. By FREDERICK COTTON, A.M., F.A.C.S., Visiting Surgeon to the Boston (Mass., U.S.A.) City Hospital. London and Philadelphia: W. B. Saunders Company. 1924. Pp. 745. 50*s*.

THE first edition of this sound and original work appeared in 1910. It was to be expected that this after-war edition would bear evidence of the influence on practice of the experience gained in military hospitals. It is somewhat surprising, therefore, to find how little that experience has affected civilian practice as it is represented by Dr. Cotton, who, however, takes care to tell us in his preface that his conclusions are based almost wholly on his own military hospital practice, and not from "a re-hashing of the bewildering printed and rumoured war-time reports." He is not enthusiastic in favour of the use of Thomas's splints for fractures, except as a temporary transportation measure, or combined with the Balkan frame. His experience seems to have been unfortunate, for he speaks of the occurrence of "horrid perineal sloughs" due to the use (or abuse) of this splint. Speaking of injuries of the upper extremity, of "arm traction downward, Thomas splint," he says: "I see no excuse for this arm traction thing." As regards the operative treatment of fractures, he thinks that the tendency of to-day is to minimise the use of inlay grafts, plates, and bands, and other "stunt" operative measures.

Evidently Dr. Cotton is a real master of his own methods, so that, perhaps, his results are not likely to be improved by his adoption of other methods, based on different principles. Anyway, the treatise is replete with information on the pathology and mechanism of fractures and dislocations, and with sound practical advice as to their treatment. It contains 91 pages and 192 illustrations more than the first edition.

JOURNALS.

JOURNAL OF PHYSIOLOGY. Edited by J. N. LANGLEY, Sc.D., LL.D., F.R.S. Vol. LIX., Nos. 2 and 3. Cambridge University Press. 1924. Pp. 99–258. 13*s*.—The Effect of Cerebral Anæmia upon Blood Pressure and Respiration, by Ff. Roberts. This communication deals in detail with the effects of anæmia upon the medullary functions. The experiments were all performed upon anæsthetised (urethane) rabbits and cats, with exception of two upon dogs (morphia). It was found that both the vaso-motor and cardio-inhibitory centres are directly stimulated by a slight diminution in their blood-supply. The resulting inhibition checks and sometimes annuls the rise of pressure which vascular constriction tends to produce. The respiratory centre is totally insensitive to diminution in its blood-supply until this diminution becomes extreme. Gasping is a modification of the nervous mechanism acting as a whole and is not due to the action of a separate centre. When the medulla is completely or almost completely anæmic, injection of lactic acid directly into a cerebral artery stimulates

the vaso-motor centre, but is without effect upon the already paralysed respiratory centre. Hæmorrhage is not attended with any increase in breathing until a very low pressure is reached. Hyperpnœa of variable degree then occurs.—Taking up Carbon Monoxide by the Hæmoglobin of the Spleen, by A. Hanak and J. Harkavy. These observers confirm the statement of J. and H. Barcroft that on exposure of rats to an atmosphere which contained carbon monoxide the gas was rapidly taken up by the blood of the general circulation, but only slowly penetrated into the hæmoglobin of the spleen. This observation is extended to guinea-pigs and rabbits. In the case of guinea-pigs, between four and six hours may elapse before the hæmoglobin in the spleen pulp attains equilibrium with that in the blood; in the case of rabbits over two hours may elapse—a fact which suggests the almost complete occlusion of the blood-stream from the spleen, and the reduction of the rhythmic contractions to something quite nominal.—Alveolar CO_2 Pressure after Violent Exercise, by J. B. S. Haldane and J. H. Quastel. They find that the depression of the alveolar CO_2 after exercise can be used as a measure of the excess above normal of lactic acid in the blood. The amount of the latter after exercise and the rate of its removal have been determined. The rate is independent of the amount of lactic acid present, and is little affected by training or phosphate ingestion. The process of removal is vastly slower than that of the intramuscular lactic acid.—The Influence of the Blood-supply on Pancreatic Secretion, by B. P. Babkin. The pancreas is extremely sensitive to changes in the circulation provoked by stimulation of different nerves, or by substances with vaso-constrictor character or by compression of the aorta above the cœliac artery, while it continues to secrete some time after the blood pressure falls to zero. The more copious the pancreatic secretion the more difficult it is to inhibit it. The author's experiments were performed on dogs, and in chloralose he found a narcotic which itself produced a moderate secretion of pancreatic juice, and did not affect the action of hormones nor of secretory nerves. The slow continuous flow is not antagonistic to the secretory action of secretin, vagi, and pilocarpine. The section of splanchnic nerves increases the secretion provoked by chloralose, secretin, hydrochloric acid, and vagi. The stimulation of the vagi in the neck, the nerves being cut below the heart, practically does not affect the pancreatic secretion. But if a rise of blood pressure follows the stimulation the secretion is inhibited. The same relations are observed by compressing the vena cava inferior above the diaphragm. The introduction of defibrinated blood into the circulation produces a rise of blood pressure and inhibition of the pancreatic secretion. Stimulation of vagi below the heart provokes the secretion of pancreatic juice under extremely low blood pressure.—On the Location and Nature of the Action of Insulin, by J. H. Burn and H. H. Dale. The disappearance of dextrose from the blood-stream under the influence of injected insulin is now familiar, but the method of the disappearance remains obscure. Various suggestions have been made. Experiments were made on the isolated mammalian heart and on the decapitated and eviscerated cat with the view of providing additional evidence as to two relatively simple and primary points. (1) Whether the sugar which disappears under insulin is immediately oxidised or stored in some form which has hitherto escaped detection; and (2) what organs are concerned in the removal, whether by destruction or synthesis. The main results obtained are: Addition of insulin to the perfusion fluid accelerates the removal of dextrose therefrom by the isolated mammalian heart (confirming Hepburn and Latchford). The output of CO_2 by the heart is not proportionately increased, so that the extra loss of sugar is not entirely due to increased oxidation. In the decapitated and eviscerated cat, with constant infusion of dextrose, insulin produces the characteristic fall of blood-sugar. If the blood-sugar is prevented from falling by accelerating the infusion, insulin causes disappearance of sugar at many times the normal rate. The earlier stages of the insulin action are accompanied by increased consumption of oxygen, which may be pronounced, but is seldom, if ever, sufficient for the oxidation of the extra sugar lost. The respiratory quotient of such a preparation has always been unity, and has remained practically unchanged under the action of insulin. Immediate conversion of the sugar into fat or lactic acid seems to be excluded. The isolated hearts and the eviscerated preparations, from cats rendered diabetic by complete pancreatectomy, have given results in all respects similar to those of normal animals. The authors discuss the significance of these observations in relation to current theories.—The Effect of Insulin on Blood Volume, by J. B. S. Haldane and H. D. Kay. The administration of insulin to normal rabbits leads rapidly to a very appreciable rise in the blood volume. Comparative quantitative determinations in blood before and after the giving of insulin, particularly in the case of substances not equally distributed between the corpuscles and plasma, can only be accepted if this volume change is taken into account. The osmotic pressure of serum remains the same before and after the injection of insulin.—The Glomerular Control of the Kidney Blood Flow, by J. M. O'Connor. The experiments were made on rabbits anæsthetised with urethane. Owing to the anatomical structure of the kidney a secretion pressure of the urine at the head of the uriniferous tubule could not go above the pressure of the blood in the capillaries of the Malpighian tuft without cutting off the blood-supply from the kidney tubules. This would explain on a purely secretory theory the dependence of the formation of urine on the blood pressure. A similar cutting off of the blood flow through the kidney might be expected to occur when the blood pressure falls. An arrangement for determining the flow of blood for brief periods during a fall of blood pressure is described by the author.—On the Constancy of the Basal Metabolism, by Graham Lusk and E. F. Du Bois. From the records of experiments with 11 dogs the basal metabolism may be approximately determined within an error limit of $\pm$ 15 per cent. The same dog may manifest a constant level of basal metabolism extending over two years. A man between 30 and 40 years of age may show a basal metabolism during 11 years within a variation of $\pm$ 7·6 per cent.—The Effect of Variations in Blood Pressure on Pulse-Wave Velocity in the Brachial Artery in Man, by Sylvia K. Hickson and B. A. McSwiney. In normal subjects between the ages of 20 and 30, when a fall of blood pressure was noted on raising the arm to a vertical position, the lengthening of the carotid-radial interval was observed, with an appreciable slowing of the pulse-wave velocity. This postural variation in blood pressure is considerable and must be accounted for when estimating the pulse-wave velocity in arteries such as the femoral.—Vaso-Motor Centres. J. N. Langley describes his results on spinal vascular (and other autonomic) reflexes and the effect of strychnine, as determined mainly on curarised spinal cats. The animals were anæsthetised first, then either decerebrated, the vagi cut, and the cervical spinal cord severed, or they were decapitated. The great reflex rise of blood pressure obtainable after a small amount of strychnine has been injected makes it probable that in pathological cases of increased spinal excitability spinal vascular reflexes are important. No evidence was obtained that strychnine greatly increases the excitability of any autonomic nerve centre except the vaso-motor centres.—The other contributions are: The Effect of Curari and Degeneration upon the Electrical Excitability of Striated Muscle, by C. F. Watts; Blood Curves constructed with Arterial and with Venous Blood, by F. R. Fraser, G. Graham, and R. Hilton; and Renal Function in Summer Frogs and Winter Frogs, by J. de Haan and A. Bakker.

THE LANCET.

LONDON: SATURDAY, DECEMBER 6, 1924.

LICENSED HOUSES.

AT the first session of the Royal Commission on Lunacy Law and Administration, reported in THE LANCET of Nov. 1st, its Chairman, Mr. H. P. MACMILLAN, K.C., suggested that it might be necessary to reconsider the policy which since 1890 had arrested the growth of the licensed house. It may be appropriate to remind our readers of the genesis and functions of these valuable institutions. Licensed house is the official description of what is popularly known as a private asylum. Previous to the year 1774 there was no supervision or inspection of private "mad-houses" as they were then called. About that time public interest was aroused in matters pertaining to mental illness owing to the breakdown of George III. and of one of his Ministers. Private patients were then often badly housed, clothed, and fed, and many were improperly detained. It is only fair to add that conditions in the public "mad-house" were equally unsatisfactory. An Act was passed in 1774 which enforced the licensing of private asylums, hence the term—licensed house. The Act provided for the visitation of licensed premises, and made a doctor's "order" a necessary preliminary to admission. The licensing authority for the metropolitan area devolved on five Fellows of the Royal College of Physicans, appointed annually; in the provinces, the authority was the Justices of the Peace in quarter sessions. A licence was granted to any person who applied, and paid the necessary fee, and a licence could not be revoked. "Keepers" of licensed premises were obliged by the Act to send a notice of every admission to the Commissioners of the Royal College of Physicians. This Act of 1774 was the commencement of legislation concerning private hospitals for the insane, and incidentally created the first central authority in lunacy matters, the nucleus of the present Board of Control. Legislation affecting licensed houses appeared from time to time, notably in 1845, when the Lunacy Commission, with much increased powers, was constituted, and included three barristers among its paid members. In the year 1890 the Lunacy Act at present in force was passed. It resulted from the prolonged sittings of a Parliamentary Committee appointed in 1877. Among many changes, licensed houses were notably affected. By this Act no fresh licences were to be granted, and no increase of the number of patients in existing houses was to be permitted. It was, and is, permitted to transfer a licence from an old house to a new house, and provision is made for the division of a licence where a house is carried on by joint licensees. Such is a brief history of the origin and development of the licensed house to the present day. On Jan. 1st, 1923, there were 56 licensed houses in England, 19 being in the metropolitan area and 37 in the provinces. Patients in the 56 houses on the above date numbered 2206; 862 being men and 1744 women. In addition there were 149 voluntary boarders. No criminal or pauper patients are now received in licensed houses.

The restriction of licences in 1890 resulted from the conflict of opinion and evidence expressed before the Select Committee whose recommendations formed the basis of the Act. It was argued that it is undesirable for private individuals to take payment for the care of the insane, and that there must be a temptation to licensees to detain profitable patients for an unnecessary period. Further, a great many specific charges were brought against the owners of private asylums, accusing them of detaining individual cases for the sake of profit. Not a single charge was substantiated on inquiry by the Committee. It was also believed that the demand for private homes would cease with the growth of public hospitals and registered hospitals. To some extent this has been the case, as in 1890 there were 89 licensed houses in England, a figure which has fallen to 56. Yet licensed houses meet a constant public demand for private accommodation and treatment, and investigation shows that similar houses, privately owned and managed, exist in every civilised country in the world. There are houses to meet the needs and financial requirements of most sections of the English public. The licence is renewable annually; for the metropolitan houses by the Board of Control, and for the provincial houses by the justices of the county or borough in which the house is situated. The licence may be revoked, without appeal, by the Lord Chancellor on the recommendation of the Board of Control, or the justices concerned. Licensed houses are rigidly inspected, and the licensing authorities have considerable power; for example, they may direct alterations and improvements to be carried out if they consider such changes necessary for the comfort of the patients. No structural alterations may be made without the sanction of the Board of Control. Payments made by patients are notified to the Board, which is also informed of any change in the medical staff of a licensed house. Members of the Board visit the metropolitan houses six times in each year, and may arrive at any time of the day or night. The visitors to the justices, who include a medical man in their number, pay at least four visits annually to the provincial houses, while the Board of Control visits them twice in each year. These visits may be again made at any time of the day or night. In addition, licensed houses are visited by the visitors of the Lord Chancellor, who may call to see the diminishing number of patients found insane "by requisition," or to report on a patient whose affairs may be under the protection of the Master in Lunacy. The Board of Control and the visitors appointed by the justices interview every patient at their visits, and have access to the rather formidable array of official books and papers. They leave written records of each visit, and where doubt exists as to the propriety of detention in any particular case, a minute is made about the case in what is known as the patient's book. Moreover, both the Board of Control and the visitors have jurisdiction to discharge patients in licensed houses on their own authority. This frequent visitation is an undoubted advantage of the licensing system and affords protection to both public and doctors. Among other advantages of the licensed house are their small size, and the comparatively small number of cases resident at one time. The houses are generally very free from the appearance and routine of an institution, and the friends of patients enjoy complete liberty to visit at any hour, and that in strict privacy. Moreover, the relationship of the patients and their friends to the doctors is intimate, and closely resembles that existing between the family doctor and his patients in private practice.

Some measure of detention is necessary in many cases of mental illness, for social reasons, and it is this fact, coupled with the lack of insight shown in many cases into the nature of their disease that necessitates the judicial procedure known as certifica-

tion, which implies the power of detention, properly protected against abuse respecting the liberty of the subject. Insanity is not the only illness in which some loss of personal liberty occurs. The infectious fevers, and many cases of tuberculosis, may be cited as examples. Unnecessary detention is as unlikely to occur in a licensed house, as in a fever hospital or sanatorium. The English public has not yet realised this fact, for it is still unable to regard insanity as an illness, requiring adequate treatment. Progress has been and is being made, as is shown by a significant change in the legal phraseology used in the various "Lunacy" Acts. In 1874 a hospital was a "mad-house," in 1890 it became an "asylum," while to-day the term "mental hospital" is in general use and is sure to find its way into future legislation. Certification is disliked by the public, and the Board of Control now allows many patients, though certifiable, to enter licensed houses as voluntary boarders, a system that might with advantage be simplified and extended. To avoid certification, a step designed for the protection of patients, there has again been a tendency of late years for certifiable patients to be received, for payment, into unlicensed premises without any formalities whatever. There can be no doubt that existing licensed houses supply a definite public need; it is also certain that the growth of the reception of patients for payment, into houses which are not open to the inspection and control of a central authority, is highly undesirable and indicates a return to a condition of affairs which all "lunacy" legislation has been framed to prevent.

VALUE OF THE REFLEXES IN DIAGNOSIS.

OF the various objective methods of investigation pursued by the neurologist in the course of clinical testing, none furnishes him with more valuable information than that concerned with what are described somewhat inaccurately as the "reflexes." The detailed examination of the reflexes, using the term in its wide sense, offers the advantage of providing phenomena which can be visually observed, and some of which, further, the patient is incapable of modifying at will. Another advantage resides in the fact that their state can be determined in the course of a very few minutes, and that by scrutiny in a methodical manner from the eyes to the soles of the feet they can supply the examiner with some knowledge of the functioning of the central nervous system throughout its whole extent. No other system of examination offers such chances of diagnosis at once rapid, yet accurate, provided certain principles are borne in mind and certain precautions taken. In an address by Dr. RISIEN RUSSELL, an abstract of which appears on p. 1213 of this issue, the diagnostic value of the reflexes is well brought out by clinical illustrations.

For due appreciation, however of data, many of which may be gathered even by the tyro, it is essential that the examination should be conducted with apprehension of the nature of the reflexes, and also of their topographical significance. Leaving aside certain physiological minutiæ, we may say that, in respect of what are commonly termed the tendon reflexes, the phenomenon of a muscular twitch following a smart tap on its tendon depends on the integrity of the reflex arc from the sensory end-organs in the muscle, through the dorsal or posterior roots of the cord to the ventral or anterior horn motor cells, and so by the motor roots back to the muscle. As an essential preliminary the muscle must be in a state of adequate tone or tension, which can be provided passively, in a degree, by putting it somewhat on the stretch. Since, further, the voluntary motor system can to some extent interfere with the activity of spinal reflex arcs, the examinee's attention, if need be, must be directed elsewhere than on the part that is being investigated. With limb in the optimum position, and attention diverted, a tap on the tendon will always, in health, elicit a muscular response. If the "jerk" is absent, a pathological condition exists; this, clearly, may reside in afferent mechanism, spinal centre, or motor efferent. When, therefore, to take a concrete instance, the knee-jerks cannot be elicited if the above precautions are duly observed, the investigator has reached the stage of determining the organic nature of the affection, but he cannot, without further study, localise the mischief more specifically. For example, the knee-jerks may be absent owing to lesions of the afferent limb of the spinal arc (tabes dorsalis), or of the intraspinal section (acute poliomyelitis), or of the anterior horn cells and efferent motor fibres (progressive spinal amyotrophy), or of the end-organs in muscle and muscle substance itself (myopathy). Naturally, one or other of these may suffer in combination (peripheral neuritis). To establish the loss of tendon reflexes is to make a diagnosis of the organic nature of the disease and of its topography, but nothing more. The regional spinal level of the outfall of reflectivity can be determined with ease by ranging from the scapulo-humeral reflex (fifth cervical) to the ankle-jerk (fifth lumbar, first sacral). Other reflexes can be demonstrated both above and below these levels.

The so-called cutaneous reflexes depend for their activity on a different physiological mechanism from that of the tendon-jerks, but the information they provide has similarly a double diagnostic value, topographical and differential. Thus the epigastric and abdominal cutaneous reflexes indicate the physiological condition of the reflex arcs through the spinal cord from about the sixth to the twelfth thoracic segments. The plantar cutaneous reflex shows the condition of the arcs through the lowest lumbar and upper sacral segments. But these and other cutaneous reflexes also provide a clue to the physiological state of the cortico-spinal motor mechanism that is anatomically localised in the pyramidal tracts. Unfortunately, there is a common impression to the effect that the change of the cutaneous plantar reflex from normal flexion of the great toe to extension is indicative of structural changes in the pyramidal tract; for instance, lateral sclerosis. This, however, is certainly not the case. The extensor plantar movement may occur in a limb that is in no sense paralysed to any recognisable degree; it does not conform to degrees of spasticity, for in a spastic limb there may be ankle clonus and a flexor response; it may be purely transient though genuine, as after an epileptic fit. The plantar response may change from extensor to flexor under observation and by means of certain technical procedures, as BABINSKI himself has shown. In spite of this variability, a plantar response in extension remains a most valuable sign of an organic as opposed to a "functional" physiological change in the normal activity of the pyramidal mechanism. When this change occurs, the movement of the great toe in response to cutaneous stimulation is shifted from one physiological group of muscles (toe flexors) to its antagonists (toe extensors), a shift of peculiar interest and significance. It might be of clinical importance to determine whether there is a similar shift in the case of the abdominal reflexes. Their abolition in organic pyramidal disorder would

correspond to the absence of the plantar flexion; is there any movement in the antagonists of the recti abdominis to correspond to plantar extension? As far as we know this point has not been investigated.

There are other reflexes still—the so-called organic reflexes—whose activity requires the integrity of reflex arcs involving muscles that are not voluntary in the usual sense—arcs in which there are components belonging to the sympathetic nervous system. The value of these as aids to diagnosis is very considerable. Armed with these weapons, the clinician can reach a diagnosis with facility in any case, a diagnosis, however, that is topographical rather than pathological. This is the limitation of the method. If the bulbo-cavernosus reflex is abolished, he knows for a fact that there is impairment of function of the arc through the third sacral segment, but not whether he is dealing with tabes dorsalis, sarcomatosis of the cauda equina roots, tumour of the conus medullaris, and so on. If there is reflex iridoplegia, he cannot *ipso facto* and without further testing say whether mesencephalic neurosyphilis, mesencephalic tumour, epidemic mesencephalitis, trauma, or which of half a dozen other pathological states is responsible for the phenomenon. The tendency of the beginner to link the absence of the knee-jerks with tabes, the presence of the extensor plantar response with lateral sclerosis, the Argyll Robertson sign with syphilis, is venial but none the less regrettable. It should be the task of the teacher to inculcate principles rather than particularities. Rightly employed, the use of the reflexes aids as nothing else can in the analysis of neurological symptoms, but as the examiner taps one tendon after another, or stimulates one skin area after another, he should, in his mind's eye, envisage the corresponding segments of the nervous system, with their afferent and efferent paths: only thus will he derive that information which is in truth an "insight" into neural function.

MODERN ENGLISH.

IT is no easy matter for the father who has spent the laborious days and nights of his youth in the study of Addison to understand the tongue of a shingled daughter of these post-war years. In the last decade there has arisen a language, racy and descriptive, that is still partly incomprehensible to many of the older generation. It must be wholly mysterious to the strangers within our gates. This new speech, born when the principles of war-time economy seemed to extend even to words, may be ignored on the judicial bench or in the scholar's study, but it is a power in the market-place. The hour has come for the recording and explanation of this language, and with it the book—the Pocket Oxford Dictionary of Current English.[1] This little dictionary, compiled by F. G. Fowler and H. W. Fowler, well justifies the claim of its compilers to making clear the idiomatic usage of words, although there is a tendency to explain colloquial or slang expressions in equally unclassical language. For example, "to send one to Coventry" is classified into "to combine to cut him,"—possibly a foreigner would be thus justified in interpreting the phrase as meaning "a surgical consultation." As a store-house of modern terms—we hesitate to call some of them English—it is remarkably up to date. "Bradbury," "Fisher," "jazz," and "Pussyfoot" all find a place. One or two medical terms are very loosely defined—for example, "diabetes" as "a urinary disease." But the book is one of the most serviceable of small dictionaries, and a useful feature is the work of the compilers in collecting words that form a series and letting the reader know where to find them.

[1] Oxford: At the Clarendon Press. 1924. Pp. 1000. 3*s*. 6*d*.

Annotations.

"Ne quid nimis."

REGULATIONS GOVERNING FOOD PRODUCTS.

THE extensive code of regulations under the Sale of Food and Drugs Act, 1908, New Zealand Department of Health, have been considerably widened by new regulations which came into force last September. The requirements which must be complied with are set out in detail, and the conditions which cannot be permitted in connexion with most food products are prescribed with great care. The new regulations deal in particular with bakehouses and the sale of bread and pastry, places for the preparation of meat and made meat products, and for their sale in butchers' and fishmongers' shops, with the transport of meat and fish, with milk and ice-cream, and their prevention from contamination. The detailed attention paid to made-up meat products is of particular interest, since they go far beyond any powers possessed in this country, where it is generally recognised that existing powers are extremely inadequate. In New Zealand, for example, it is an offence for any person to engage in the manufacture, preparation, storage, packing, carriage, or delivery for sale of any food or of any article used or likely to be used as a food, if he is suffering from any communicable disease, or is a "carrier" of any infectious disease, or is suffering from any condition causing a discharge of pus or serum from head, neck, hands, or arms. The preparation and storage of food have to be carried out under conditions which prevent contamination by dust, damp, foul odours, or by rats, mice, or insects. All receptacles for such foods have to be kept clean. The adequate cleaning of drinking vessels and table appliances in restaurants and other premises where food or drink is sold is very fully prescribed. Detailed regulations in regard to the structure of bakehouses are enacted and as to the precautions to be observed in their usage. Places for the mincing, curing, canning, and otherwise preparing of meat (and this word is given an extended application) have to be approved and licensed by the local authority. Such premises must have smooth, impervious floors, be properly drained, internal walls with an impervious surface, roofs dust-proof and painted light colour or calcimined, construction and fittings so as to exclude, so far as possible, rats and mice and flies. Equally stringent are the requirements for butchers' and fishmongers' shops and for the storage of meat and fish in connexion therewith. The adoption of these regulations for meat and made food products in this country would mean the reconstruction of a material proportion of the buildings now in use and a very welcome revolution in practices which are now permitted, and, indeed, cannot legally be prevented.

The New Zealand regulations in regard to milk are more in line with those adopted in this country, but are more stringent. The powers for dealing with the cleanliness and freedom from contamination of ice-cream or ices are considerable and premises used for this purpose also have to be licensed. No fresh penalties are fixed in the new regulations, but presumably the penalty in Section 87 of the existing regulations will apply, and this enacts that the penalty on conviction for a breach of regulations is up to £50, and for a continuing offence not more than £2 for every day during the continuance of the offence. The detailed and explicit character of all these regulations contrast sharply with the bulk of the requirements in force in this country, which are frequently couched in vague terms. No one can read our English food enactments without being struck with what would appear to be almost deliberate looseness of phraseology. Cowsheds are to be "thoroughly cleansed from time to time as often as may be necessary," they have to be "sufficiently lighted with windows," "sufficiently ventilated" with a "sufficient number of openings" to keep the

air in the dairy in a wholesome condition. "No person shall sell to the prejudice of the purchaser any article of food or any drug which is not of the nature, substance, and quality of the article demanded by such purchaser." It is worthy of serious consideration whether this loose wording should not be abandoned and replaced by a carefully thought out series of definite enactments setting out exactly what is required. Clearly defined requirements are better for the administrator, more effective for the consumer, and fairer to the trader, who knows exactly where he stands and is not at the mercy of a terminology liable to be differently interpreted in different areas.

PASTEUR.[1]

THE pious labours of Dr. Vallery-Radot in producing a complete edition of Pasteur's writings have now reached the third volume, which contains his works on vinegar and on wine. His books and papers are reproduced with the interesting original illustrations, and there are as well a number of short notes and letters to journals in which Pasteur emphasises the correctness of his views and the propriety of giving him credit for them. In these days of reckless and snippetty production, a short course of Pasteur's larger papers would do any scientific worker good, and we can imagine no better discipline, when the edition is complete in seven volumes, than to take it away to a lonely place for the long vacation and read it steadily through. It would have been helpful if the edition could have had a commentary indicating the relation of Pasteur's work to the present state of knowledge on the subjects he dealt with; such a design would certainly have been difficult to execute, but there has been so much specialisation since his day that few people can adequately appreciate the nuances of all his work.

DIABETIC COMA WITHOUT KETONURIA.

IT is usually accepted as a clinical axiom that coma with glycosuria but no ketonuria is not due to diabetes. The converse picture, however, of a comatose patient with considerable ketonuria but no glycosuria is occasionally met with in cases of diabetes. This is usually the result of some stringent measure, such as starvation, which has been adopted in order to render the patient's urine sugar-free. A few cases of diabetic coma without ketonuria have been recorded, and the October number of the *Archives of Internal Medicine* contains an account of one in which the ketonuria was insignificant.[2] Unfortunately, the tests used for the detection of ketone bodies in the urine are not given, nor is there any record of a post-mortem examination. The example quoted is that of a child, aged 9, who was admitted to hospital in a state of coma. The breath smelt strongly of acetone. The urine contained 3 per cent. of sugar and showed a faint trace of acetone, but no diacetic acid. The blood-sugar was 333 mg. per 100 c.cm., and the CO_2 combining power of the plasma, according to the method of van Slyke and Cullen, was 14·3 per cent. by volume, and so very considerably reduced. Further noteworthy points in the case were the failure of the blood-sugar to fall after the administration intravenously of 110 units of insulin (H. insulin-Lilly) within 12 hours, and the fact that the cerebro-spinal fluid, removed immediately after death, showed a very large amount of acetone as judged by the reaction to Legal's test. Death from coma occurred 15 hours after admission to hospital. Despite the large amount of acetone found in the cerebro-spinal fluid immediately after death, the blood just prior to death showed no acetone and the urine contained only a trace. The case is one of exceptional interest and its pathogenesis remains somewhat obscure.

[1] Œuvres de Pasteur. Edited by Pasteur Vallery-Radot. Vol. III. Paris: Masson et Cie. 1924. Pp. 519. Fr.100.

[2] Report of a Fatal Case of Juvenile Diabetic Coma with Insignificant Ketonuria and a Large Amount of Acetone in the Cerebro-spinal Fluid. By Henry M. Feinblatt, M.D. Archives of Internal Medicine, Oct. 15th, 1924.

ANÆSTHETICS IN ANIMAL OPERATIONS.

IN the course of a communication on the selection and administration of anæsthetics to animals, delivered recently to the Section of Anæsthetics of the Royal Society of Medicine, Prof. F. Hobday pointed out the curious fact that animal patients, when they have the misfortune to require surgical attention, are better protected by the laws of the land than those of human origin. By the amended Animals Anæsthetics Act, passed in 1919, a long list of operations performed in veterinary surgery were officially scheduled for compulsory anæsthetisation. For the performance of some of these a general anæsthetic is essential; with others a local anæsthetic may be used at the discretion of the operator. In the former class are included, for horses, dogs, cats, and bovines, operations for ovariotomy and laparotomy, amputations of penis, mamma, or uterus, scrotal and inguinal hernia. Moreover, horses must be given a general anæsthetic for operations for quittor, stripping the wall or sole of the hoof, poll evil, fistulous withers, extraction of permanent molar teeth, scirrhous cord, and extensive tumours; dogs and cats for castration when they are over six months old, and bovines for operations for actinomycosis and dishorning if they are over 3 months old. A local anæsthetic at least must be used for enucleation of the eyeball, umbilical hernia, and urethrotomy in all these animals, and the same ruling applies in horses to neurectomy, application of the actual cautery, docking, and trephining in dogs and cats to docking of the tail, and in bovines to rumenotomy and trephining. In regard to castration, he pointed out that the horse, ass, and mule are specially exempted, not on the ground that there is less pain when their testicles are removed, but because of the powerful and successful opposition raised at the time and backed up by influential agriculturists and owners of valuable horses. Their chief reason was that, had the Act become law as it was, the travelling gelder (who is in many districts of England the man who does most of the castrations) would have been unable to have carried on his job—partly because of his ignorance of the proper method of administration of anæsthetics and the risks to be incurred, and partly because of the difficulty (for him) of obtaining chloroform, and the added expense in time and money. Many thousands of horses are operated upon in the standing position every year. Prof. Hobday said that when done expertly the whole operation from start to finish did not exceed two minutes at most, the colt showing so little evidence of after-pain or discomfort that he usually walks right up to the manger and commences to feed at once. Here was a concrete illustration of the part played by the brain of the human in the anticipation of things—in this operation, at all events, the animal had no preliminary dread or anticipation—and here the veterinary surgeon scored over his human colleagues.

The paradox that animals are better protected from unnecessary pain than human beings is substantially true. Lawyers could not apply to inarticulate creatures the ancient maxim, *Volenti non fit injuria* or the idea that the patient's consent may be a defence to a claim for damages. On the contrary, public opinion has driven Parliament into vigorous protective measures. Vivisection is carefully restricted under a system of licences. The Protection of Animals Act of 1911 made it an offence to cause an animal to be operated upon "without due care and humanity." The Animals (Anæsthetics) Act of 1919 went further, as Prof. Hobday pointed out. The Act covers every person who operates, whether qualified or unqualified; the owner of an animal has, of course, some means of distinguishing qualified from unqualified practitioners by means of the familiar system of registration set up by the Veterinary Surgeons Acts. Parliament has never gone so far in protecting human beings from the pain of operations, though professional standards of practice in hospitals and elsewhere (which in part receive official confirmation in the working of a State

service of health insurance) happily render legislation largely unnecessary. One might add another discrimination in the treatment of human beings and animals. Under the 1911 Act (replacing the Injured Animals Act of 1907) the police can, on the certificate of a veterinary surgeon, obtain the destruction of an animal which is mortally injured or so diseased or in such a physical state that it is cruel to keep it alive. We have not yet reached the point at which on formal medical certificate human beings can be similarly put out of their misery.

CATARACT IN DYSTROPHIC MYOTONIA.

MYOTONIA congenita or Thomsen's disease is a condition in which any attempt to use certain muscles sets up a rigidity in them so that, for example, when a patient grasps anything he is unable to relax his grasp for an appreciable time. Fifteen years ago the late Dr. F. E. Batten with Mr. H. P. Gibb published a paper [1] showing that certain cases that had been described as examples of muscular atrophy in Thomsen's disease really belonged to a distinct and independent category. Two facts were subsequently discovered—one, that the disease which had been known to be, as a rule, familial, always occurs in some members of a number of families of the same child-rank in relation to a common ancestor; the other, that one of the extra-muscular symptoms that go along with the disease is a form of cataract. In the dystrophic generation some members who are not otherwise affected may have premature cataract alone. Affected members may also have it, and—a very remarkable circumstance—even in other generations of the same stock where there is no member affected with the muscular symptoms cataract is not uncommon. If we go back for two generations before the affected one the cataract is generally of the ordinary senile type. In the generation immediately preceding the one with the affected stock it is generally presenile and in the affected generation always. The subject has recently been investigated by Dr. W. J. Adie, who, in the November number of the *British Journal of Ophthalmology*, suggests that many of the cases which have been described as tetany cataract are examples of this disease. In 1912 J. Hoffmann put forward the theory that all the symptoms, both muscular and ocular, were the result of a general intoxication, due to a disturbance in the organs of internal secretion or of the central nervous mechanisms that control them. Another suggestion is that the toxin that causes the cataract is the result of the breaking down of the muscular tissue. According to Dr. Adie, cases of dystrophia myotonica have been reported from all over the world, their numbers now running into hundreds. He has himself found records of 66 cases in which cataract was a symptom occurring along with the muscular symptoms. In 41 cases he found records of cataract occurring in the affected stock, either in the same or in previous generations, without the accompaniment of muscular symptoms. This evidence, supporting as it does that of many other authorities, makes it clear that a connexion exists between cataract and a congenital constitution, one of whose manifestations is a peculiar affection of the muscular system. According to all observers the cataract begins in the posterior cortex. According to B. Fleischer [2] it ripens fairly quickly to a total soft cataract with a small nucleus at about the same time in both eyes. It is highly probable that the connexion that many of these cases have with a general disease has hitherto passed unnoticed. It would therefore be well if whenever an ophthalmic surgeon comes across a case of presenile cataract he would make careful inquiries with a view of eliciting a possible connexion with muscular cramps and muscular atrophy, either in the patient or in the relatives, near or remote.

[1] Brain, 1909.
[2] Archiv für Ophthalmologie, 1918 xcvi., 161.

BISMUTH TREATMENT OF SYPHILIS.

Dr. H. de T. Shivers,[1] chief of the United States Public Health Service for the Treatment of Genito-urinary Diseases, records his observations on 60 syphilitic patients treated by bismuth, nearly all of whom were in the tertiary stage. The vast majority showed improvement, and with the exception of three cases the reactions following the administration of the drug were rare and not severe. Potassium bismuth tartrate with butyn was the preparation exclusively used; 0·1 g. was the dose given in ordinary cases once a week, and 0·2 g. in more severe cases. A total of 2 g. was administered, and after an interval of four weeks a second course comprising the same number of injections was given. If a third series of 20 injections was needed the rest interval was longer. A few patients with early secondary syphilis who resisted arsenic responded to bismuth. The effect of the drug on tertiary lesions was rapid and in some cases more favourable than that due to arsenic. In neurosyphilis relief of meningeal headache was as prompt as after salvarsan. In cerebral syphilis bismuth was effective in controlling convulsions and in relieving insomnia and nervousness, while in tabes it was more successful in checking the lightning pains than arsenic. Its action on the Wassermann reaction was fairly satisfactory, as 16 patients, or 26·6 per cent., gave a negative reaction after a total dosage of 4 g. None of the patients developed stomatitis, probably because the drug was never given more often than twice a week, and also because they received careful instructions in the proper care of mouth and teeth. Bluish-grey lines on the gums were seen in a few patients receiving 0·2 g. a week. Only three patients developed severe reactions which consisted in severe chill, high fever, nausea and vomiting, and a feeling of marked oppression in the chest, but the occurrence of such reactions is a warning that the administration of bismuth is not without some danger to the patient, and that the same care should be exercised in its use as in the cases of salvarsan preparations.

SCHISTOSOMIASIS IN NATAL.

URINARY schistosomiasis, or bilharziasis, is quite the most common form of parasitic infection in man in Natal. Although the prevalence of this disease has been recognised since 1864, when Dr. John Harley first detected the characteristic terminal-spined eggs in a case of hæmaturia in that colony, its importance from a public health standpoint has once more been emphasised by Dr. C. G. Kay Sharp, Medical Inspector of Schools, Natal, in an article he has contributed on this subject to the *South African Medical Record* of Oct. 25th. The infection appears not to be confined to the native or Asiatic, but is also prevalent in European school-children. The coastal area of the province is heavily infected, especially the river estuaries, where swamps and lagoons form in which the molluscs which act as intermediaries abound. The exact proportion of natives infected with this parasite is difficult to ascertain, since a large number never seek European medical advice, but the incidence amongst women is known not to be high, as they are not permitted to bathe in public places, and so do not risk the danger of infection. Dr. Kay Sharp has collected records of 300 cases of urinary schistosomiasis in school-children, the proportion being 40 out of 300 in an Indian school at Stanger, while in nine European schools 64 cases of hæmaturia were discovered, and it is estimated that in Durban 2·4 per cent. of the male school population is afflicted in this manner. In young persons the hæmaturia is most marked after exertion, especially on a hot day. Symptoms may include headache, digestive disturbances, and giddiness, results of toxic absorption, pyrexia, urticaria, abdominal pain, pulmonary symptoms, and emaciation. The tingling, or itching, of the skin, due to penetration of the cercariæ through the integument, is a fairly common

[1] Archives of Dermatology and Syphilology, October, 1924.

symptom after bathing. Attacks of appendicular colic, due to deposition of the eggs in the appendix, have also been observed. Dr. Kay Sharp's recommendations regarding the prevention of the spread of this form of schistosomiasis are various. Firstly, it should be made compulsorily notifiable to the health authorities, while indigent sufferers should be given free treatment. Every effort should, therefore, be made to persuade sufferers, by means of propaganda and education, to seek treatment. All rivers, spruits, and lagoons which are known to be infected should be advertised to the public, and warning notices erected at public bathing-places. The keeping of domestic ducks, which feed on freshwater snails in infected waters, should be enthusiastically encouraged. It is stated that small minnows, known as "millions," are useful also in this respect, as they are said to feed upon the cercariæ. Certain wild birds, such as ducks, egrets, herons, flamingoes, ibis, and storks which also feed on snails, should be vigorously protected. It has even been suggested that the importation of a bird, known as the Australian mudlark, might be advisable.

INTRA-UTERINE OVARIAN GRAFTS.

THE operation of transposing the ovary with its neurovascular pedicle into the uterus is intended to preserve menstruation with the possibility of pregnancy in women after double salpingectomy. In a recent communication[1] read to the Académie de Médecine, Paris, Prof. T. Tuffier brought forward considerable clinical and experimental evidence in favour of this procedure. In his experience the efficiency of the operation is undoubted, although the results are not constant. Since July, 1922, he has performed the operation on 38 occasions; after excluding seven cases operated upon since May, 1924, it was found that nearly 90 per cent. of the remainder had regular periods, sometimes more profuse than formerly and occasionally preceded by painful symptoms. Pregnancy with normal labour was recorded in one instance. There were no deaths, but late hysterectomy was necessitated on two occasions, including one for intestinal obstruction not related to the ovarian transposition; also, one laparotomy was performed for a post-operative hæmorrhagic extravasation. Two other patients ran a temperature of 38° C., which was accompanied by a painful sero-purulent vaginal discharge, and in one a gangrenous ovary was extruded. These accidents were ascribed to imperfections inseparable from the evolution of a new technique, of which a detailed account, illustrated by 14 well-printed plates, appeared recently.[2] The operation includes resection of both tubes, mobilisation of the intact ovary, and its fixation into a previously dilated uterus; the uterine wound is afterwards brought together by three or four interrupted catgut sutures followed by a second series of linen Lembert serous sutures close together. It is necessary to be sure that the ovarian pedicle is not constricted and that peritonealisation is perfect. No definite conclusion can, of course, be drawn from such a small number of cases, nor has sufficient time elapsed to judge of the after-results, but the incidence even of one pregnancy among his 38 cases is of great interest. On the other hand, the preservation of menstruation which may be more profuse than formerly and may be preceded by painful symptoms is not likely to be welcomed by the patient unless she is keenly desirous of embracing even a slender chance of another pregnancy.

A CASE OF LEISHMANIASIS IN RIGA.

Dr. R. Adelheim reports,[3] from the Pasteur Institute of Riga (Latvia), a very carefully investigated case of leishmaniasis in a child of 5. He observes that tropical diseases are always slipping into Europe now and must be kept well in mind by doctors who see puzzling cases. The child's illness had come on insidiously four months before with fever, loss of weight, and anæmia. Dr. Berkholz, who saw her on July 30th, 1921, noted that the spleen was greatly enlarged and hard, and that the liver was slightly enlarged too. A blood examination showed red blood corpuscles, 2,290,000; white blood corpuscles, 4100; hæmoglobin, 40; differential counts taken about that time gave, per cent., lymphocytes, mostly small, 77; neutrophiles, 20 (3 immature, 12 band-form, and 5 segmented nuclei); large mononuclears, 2; no eosinophiles; myelocytes, 1. No malaria parasites could be found, but there were many leishmania parasites in a smear of blood obtained by splenic puncture. Various remedies were tried, but no improvement was observed until antimony tartrate was given intravenously about the middle of September, when she began to pick up rapidly. The red count went up quickly to 4,000,000, the white to 7400, and, per cent. in differential count, there were: lymphocytes, 50; neutrophiles, 40 (2 immature, 26 band form, and 12 segmented nuclei); large mononuclears, 8; myelocytes, 2. By Christmas the child was well, thanks to the antimony. The father was a high Russian official, three months returned from Tashkent, Russian Turkestan, where the family had lived comfortably, and the little girl had hardly been at all in touch with native children. It appeared, however, that they had brought back with them a German dog, in bad health, and always getting thinner. No leishmania were seen in a smear of its blood either, but, at the post-mortem, the spleen was found much enlarged, the liver slightly, there were characteristic abdominal hæmorrhages, and many parasites in the spleen smear. With the spleen juice Dr. Adelheim injected white mice subcutaneously, and some of them contracted the disease. The author is of opinion that the disease is not carried by a parasite such as a flea, but most likely by the stools. This question might well be the subject of a research by a medical officer in the Mediterranean, where this disease is tolerably frequent.

THE MEDICAL DIRECTORY, 1925.

THE eighty-first annual issue of the Medical Directory[1] appears a month in advance of its date, while many of the corrections which it contains are quite recent. A sign of the times is the omission of the Dental Section, after an association of 57 years' standing, owing to the fact that the publishers propose to issue shortly a separate directory of graduates and licentiates in dental surgery, intended to fill the want felt by many people for an inexpensive self-contained dental directory. The space so saved seems likely to be utilised in other ways, for on pages lxxxvi. and lxxxvii. will be found the first instalment of a list of members of the British Association of Certificated Masseurs, which is to be increased in a later edition. There is no doubt that further additions of names and addresses of other groups of medical helps would be useful to practitioners. Other features of the Directory remain unchanged, except that in the list of titles conferred upon members of the medical profession appears for the first time the name of a woman. The numerical summary records a total of 49,351 names, showing a substantial increase in every section except that of the Services, where the 1922 figure of 3475 names looks unlikely to be again reached. In round numbers, the additions in London are 250, in the Provinces 500, in Wales 80, in Scotland 550, in Ireland 200, abroad 300. The section of British Spas and Climatic Health Resorts, fresh and informing though it is, loses prestige from the omission of the corresponding section on foreign resorts which used to appear. The only misprint we have noticed is in the title of a well-known medical official, but it is unfortu-

[1] Bulletin de l'Académie de Médecine, 3e série, tome xcii., No. 33. Paris: Masson et Cie.
[2] Surg., Gyn., and Obst., October, 1924, p. 401.
[3] Archiv für Schiffs- u. Tropen-Hygiene, September, 1924, xxviii., 9, 367.

[1] Messrs. J. and A. Churchill. 30s.

nate that the names of Ministers of the Crown should already be out of date. It might be better, in a work of reference of this kind, to avoid including the names of those whom political fortune may displace. In its present issue the Directory continues to fill a worthy rôle.

UNDER the Dangerous Drugs Acts the Home Secretary has made regulations, dated Nov. 20th, (*a*) prohibiting, except under licence, the diversion of raw opium or dangerous drugs passing in transit through a port in the United Kingdom to a destination other than that to which they were authorised to be consigned from the country of export; and (*b*) modifying, in the case of prescriptions for dangerous drugs which are given on the official National Health Insurance form, the requirements to be observed before the prescription may be dispensed.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

XCIX.

THE TREATMENT OF VERTIGO.

VERTIGO or giddiness is a peculiar disturbance of equilibrium in which the patient experiences a feeling of movement either in himself or in surrounding objects. In severe cases there may be staggering or reeling, or the patient may even fall to the ground.

Equilibrium is maintained by the properly adjusted tonic contractions of certain muscles. It is controlled by a centre situated in the cerebellum. From the skin, muscles, joints, eyes, and labyrinth afferent impulses pass to the cerebellum and are there transformed into efferent impulses which travel through the superior cerebellar peduncles to the red nuclei. From the red nuclei impulses pass to the lower motor neurones, so that the contractions necessary to maintain equilibrium are ensured. Although afferent impulses then are sent from many parts, the most important are those from the labyrinth, and thus it is that vertigo is so frequently associated with aural disease. For this reason it is convenient to classify cases of vertigo into (1) those associated with aural disease, (2) those in which no aural disease is discoverable.

Vertigo Associated with Aural Disease.

This group comprises a large number of cases. In all the vertigo is due to disturbance in the labyrinth; in many it is the result of an irritative lesion in the external or middle ear—for example, wax in the external auditory canal, or suppuration in the middle ear. In others, usually the more severe, it is the result of an actual non-suppurative destructive lesion in the internal ear, the exact nature of which is not usually ascertainable. Very severe vertigo is also caused by sudden extension of a suppurative process from the middle to the internal ear, the treatment of which calls for immediate surgical interference. It is therefore necessary, in all cases of vertigo associated with deafness, to obtain the opinion of an aural surgeon that the precise condition of the ear may be determined. In a number of cases the vertigo is paroxysmal and is associated with vomiting in addition to deafness; this triad of symptoms—namely, vertigo, deafness with tinnitus, and vomiting—constitutes Ménière's syndrome. In these cases the vertigo may be so sudden and so severe as to cause the patient to fall as if felled, though in Ménière's syndrome there is never any loss of consciousness, an important distinction from petit mal and fainting.

Where the vertigo is associated with a lesion in the external ear, such as a plug of wax in the external auditory canal or a severe inflammatory lesion or with suppuration in the middle ear, the treatment is directed to the local condition.

The treatment of vertigo the result of a non-suppurative lesion in the labyrinth demands attention: (*a*) during an attack, (*b*) between the attack as a preventive measure. During the attack the patient is put to bed with the head slightly raised, hot-water bottles are put to the feet, and calomel, gr. v., administered. As a preventive measure between the attacks the patient should be warned to avoid sudden turning movements of the head, undue exertion, and the watching of quickly passing objects as experienced by looking out of the window whilst travelling in an express train. Sometimes even gazing at moving pictures may incite an attack. Constipation should be prevented, and tobacco and alcohol used only in moderation. The most efficacious drugs are iodides, bromides, strychnine, and quinine. In any particular case it is difficult to say which of these is likely to be most successful, though in those with a neurotic temperament I think bromides are indicated, whilst strychnine is perhaps the most beneficial in debilitated individuals. On the whole, however, I believe that quinine in small doses with or without bromides will be found to be the most valuable drug in warding off attacks of vertigo of this class. A useful prescription is:—

℞	Quininæ sulph.	gr. ½
	Ac. hydrobrom. dil.	♏xv.
	Tinct. aurantii	♏xx.
	Aq. ad	℥ss.

℥ss. night and morning.

Vertigo Unassociated with Aural Disease.

Vertigo in these cases may be the result of disturbance of afferent impulses from sources other than the labyrinth. This is probably the explanation of vertigo occurring when a person walks from a hard on to a soft surface, resulting in a disturbance of afferent impulses received by the cerebellum from the deep structures—e.g., joints. Again, vertigo may be due to ocular disturbances, generally the result of paralyses of external eye muscles associated with diplopia, but in a few cases in which there is no paralysis and in which dizziness with headache occurs after prolonged use of the eyes, it would appear that the dizziness is due to some error of refraction, for cases occur where examination of the eyes has revealed some error of refraction, and the wearing of suitable glasses has benefited the condition. Neurotic vertigo is fairly common, such, for example, as vertigo occurring in certain individuals when they get into a crowd or into a large open space, or when they find themselves in a confined place, such as a theatre. Fear, no doubt, plays an important part in these cases. Patients with neurotic vertigo rarely fall. This type is best treated on the general lines laid down for the treatment of neurasthenia aided by some sedative drug such as bromide of potassium or sodium and valerian. Vertigo occurring with epilepsy and migraine calls for no special treatment outside that employed for the relief of the nervous condition with which it is associated. In migraine the eyes must be carefully examined for some error of refraction, and any error found corrected with suitable glasses. In many cases no other treatment is necessary. In others considerable benefit may be derived by taking pil. quininæ, gr. i., twice a day, combined with a diet restricted in animal food and strict instructions to the patient to eat sparingly. Where the attacks of migraine occur at fairly regular intervals I believe that, in addition to the above treatment, luminal, gr. ii., each night for a few nights before an attack is expected is beneficial.

Vertigo is also associated with certain organic diseases of the central nervous system, but I know of no special treatment which affords relief in these cases. It occurs notably in cerebellar disease, when it may be central in origin or due, as in cases of cerebral tumour, to a general increase in the intracranial pressure. It

may also be met with in disseminated sclerosis and in general paralysis of the insane. Giddiness is a symptom commonly complained of in all forms of anæmia, and does not call for any treatment other than that employed for the relief of the anæmia. Another common cause of vertigo is some gastro-intestinal disturbance, such as dyspepsia and constipation. It is probably due to the sudden discharge into the blood-stream of poisons manufactured in the alimentary tract and is relieved by giving calomel, gr. v., followed by a saline purge. Toxic vertigo due to alcohol and tobacco is well recognised and is relieved by removing the cause.

Disturbance of Intracranial Circulation.

Perhaps the commonest cause of vertigo is some disturbance in the intracranial circulation resulting in either hyperæmia or anæmia of the brain. Cerebral hyperæmia is probably the explanation of the giddiness which occurs associated with hot flushes at the menopause, though in most instances where vertigo is due to disturbances in the cerebral circulation it is the result of anæmia of the brain consequent upon sclerosis of the cerebral arteries. Associated with the vertigo in these cases there is usually a high blood pressure, but in a few cases, owing to myocardial degeneration, the blood pressure is below normal. In either case, when the vertigo is severe it is a grave omen. In the one type it is often the forerunner of a stroke and in the other of sudden cardiac failure. The treatment is somewhat different in the two types of cases.

(*a*) *Where the blood pressure is high* the patient should avoid all strenuous mental and physical effort; if possible he should retire from active business. He should be warned against stooping or sudden alterations in position, but gentle exercise should be allowed. The diet should be restricted as regards meat, and two or three days a week should be meatless. Any meat that he takes is better grilled or cut from a joint rather than stewed. Beef tea, gravies, and meat extracts should be forbidden. The bowels should be kept relaxed but not purged. Suitable aperients are phenolphthalein, 2–4 gr., phenolax, 1 or 2 wafers; in certain cases a small dose of a saline aperient taken each morning is most beneficial. The object should be to produce two relaxed evacuations daily rather than an occasional purging. Alcohol and tobacco must be used only in moderation. Iodide, either as potassium iodide or in the form of iodalbin, iodicin, or collosol iodine, is, I believe, the most useful drug in this type of case. It should be given in moderate doses over a long period. In some severe cases I have seen benefit derived from taking iodalbin, gr. v., three times a day and erythrol tetranitrate, gr. $\frac{1}{2}$, night and morning.

(*b*) *Where the blood pressure is low* exercise must be more curtailed, but the same rigid precautions are not necessary as regards the diet; in fact, it is better to allow meat to be taken daily. These cases are more difficult to relieve than are those with a high blood pressure. Medicinal measures are disappointing, though some patients are benefited by giving iodide in some form in moderate doses three times a day and a digitalin granule, 1/600 gr. (Nativelle), night and morning; others obtain considerable relief by taking a Gélineau's dragée night and morning.

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LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION.—The monthly meeting of this Association will be held at the Elizabeth Garrett Anderson Hospital on Tuesday, Dec. 9th, at 8.15 P.M., when a paper will be read on Frequency of Micturition in Women by Miss E. C. Lewis, F.R.C.S.

Special Articles.

MEDICINE AND THE LAW.

STOPES *v.* SUTHERLAND: HOUSE OF LORDS' DECISION.

THE judgment delivered in the House of Lords in the appeal by Dr. Marie Stopes against the decision of the Court of Appeal in her action for libel against Dr. H. G. Sutherland was referred to in THE LANCET of Nov. 29th, p. 1137, in connexion with the question, not raised in the action, of providing teaching on contraception in medical schools. In the recent appeal the House of Lords were asked to review, and did in fact reverse by a majority, the decision of the Court of Appeal, the question at issue being in substance what ought to be the judgment that in law should follow from two answers given by the jury at the trial before the Lord Chief Justice, those two questions having been put to them. Two other questions were answered by the jury to the effect that the words published were defamatory and that the damages, if any, should be £100, but the questions and answers referred to the House of Lords were the second and third—viz.: (2) Were the words true in substance and in fact? Yes. And (3) were they fair comment? No. Upon these findings, which to many will seem inconsistent, the Lord Chief Justice entered judgment for the defendant, Dr. Sutherland. The Court of Appeal by a majority held the plaintiff, Dr. Stopes, to be entitled to judgment for damages and costs. The House of Lords, in judgments of which the principal are summarised below, held that the Lord Chief Justice had decided rightly and restored his judgment.

The Lord Chancellor, Lord Cave, after stating the facts and pointing out that the House was not concerned with the ethics of contraception, defined the points to be determined as being (1) the meaning and effect of the verdict, and (2) whether there should be a new trial. The jury's answers (2) and (3), given above, appeared at first sight to be inconsistent. The plea that the words complained of were true in substance and in fact ("justification") meant that all those words were true and covered not only the bare statements of fact contained in the alleged libel, but also "any imputation which the words in their context may be taken to convey" (Collins, Master of the Rolls, in Digby *v. Financial News* [1907] 1 K.B. 509). It had been held to follow from this that if a verdict was found in a defendant's favour on a plea of justification there was no room for any discussion of the plea of "fair comment." "The plea of fair comment does not arise if the plea of justification is made good" (Lord Loreburn in Dakhyl *v.* Labouchere [1908] 2 K.B. 325 n.). Although, however, this might be the ordinary rule, Lord Cave agreed with the Court of Appeal that its application in the present case was difficult. The Lord Chief Justice in his summing-up undoubtedly had drawn a distinction between fact and opinion, and while he had carefully instructed the jury to deal with the "real sting of the matter" and the "pith and marrow" of the statements of the defendant, he appeared to have invited them to deal under the heading of fair comment with those portions of the matter complained of that were expressions of opinion upon facts alleged and proved. He (Lord Cave) would deal with the verdict on that assumption.

The alleged libel might be divided into three parts: (1) That the plaintiff was taking advantage of the ignorance of the poor to submit them to experiments. As to this Dr. Sutherland had explained his meaning to be that the poor were made the subject, not of surgical experiments at Dr. Stopes's clinic, but of a social experiment which was contrary to the laws of nature. This was a question of fact, and the jury had found the statement to be true. (2) It was complained

that the defendant alleged that working women were instructed in a method of contraception, which had been described by Prof. Louise McIlroy as the most harmful method of which she had had experience. As to this the jury were instructed that they must not only find that Prof. McIlroy had declared this method (the use of the check pessary) to be harmful and dangerous, but must further find that it was so in fact. This also was a statement of fact, and was found to be true. The jury had before them evidence on which they could find that methods of contraception recommended by the plaintiff might cause injury, particularly with regard to the use of the "gold pin," which several witnesses had said was calculated to produce abortion. (3) The defendants in effect said that the literature published by the defendant was no less obscene than that for which Charles Bradlaugh was prosecuted, and that it infringed the criminal law. This also was found to be true by the jury, and passages in the plaintiff's books were evidence that could be considered as justifying the finding. This point again was treated as a question of fact at the trial.

The Lord Chancellor asked, if the above charges had been found to be true, what remained in the alleged libel to which the description of "unfair comment" might be taken as having been applied by the jury. In the Court of Appeal two statements had been referred to as matters of opinion upon which might arise a question of "unfair comment": (1) That regarding "the decent instincts of the poor," and (2) the expression "monstrous campaign." Possibly there might be added the expression as to the offence of Charles Bradlaugh being a less serious one. Was there, then, evidence or material upon which a reasonable jury could find that these expressions of opinion, or any of them, constituted unfair comment, the other charges having been found true in substance and in fact? This was a question for the Court, which had to determine whether the document under consideration was capable of being a libel (Collins, Master of the Rolls, in McGuire *v. Western Morning News* (L.R. 2 K.B., p. 111)). He did not think that there was any such evidence. The first appeared to him to express the opinion of the writer as to the practice of birth control itself, and not as to the plaintiff's methods of advocating it. He did not see how the reflections on the plaintiff could be said to be unfair having regard to the facts found to be true. "Monstrous" was undoubtedly comment, but if, as the jury had found, the defendant was justified in saying that the campaign was carried out by circulating obscene and criminal matter, the epithet "monstrous" could add nothing to the libel, nor could the comparison with the case of Bradlaugh. The expressions were mere shadows of the substantive charge of which no separate justification was required. His Lordship referred to Edwards *v.* Bell (1 Bing. 403), Morrison *v.* Harmer (3 Bing. N.C. 759), and Cooper *v.* Lawson (8 A. and E. 746). It appeared to him that the case under consideration fell within those decisions, that the expressions complained of as comment added nothing to the substantive charge, and that consequently there was no evidence on which a rational verdict of unfair comment could be founded. Consequently the judgment of the Court of Appeal could not stand, and he was further of opinion that there was no good ground for ordering a fresh trial on the ground of misdirection. The order of the Court of Appeal would be discharged, and the judgment of the Lord Chief Justice restored with costs above and below.

Lord Finlay, in a concurring judgment, said that it seemed to him to be impossible to hold that the bounds of fair comment were exceeded by an expression of honest opinion to the effect that the practices advocated by the plaintiff were revolting to the healthy instinct of human nature. The aversion on this ground from such methods was old and widespread. Reference had been made in argument to passages in the plaintiff's books, which were of such a nature that they had not been read aloud. The books had a wide circulation, and in his opinion were calculated to have a deplorable effect upon the young of both sexes. It would, in his Lordship's view, be absurd to say that the epithet "monstrous" exceeded the bounds of fair criticism, or that it was not fair comment to imply that such passages, as had been pointed out, might be held to aggravate the criminality of obscene libel. Lord Finlay regarded it as unfortunate that the plaintiff, a doctor of philosophy, should apply to herself the title of doctor in connexion with her clinic, as to do so must lead many of those attending the clinic to think that the person at the head of it was a Doctor of Medicine.

Lord Shaw of Dunfermline and Lord Carson delivered judgments, in which they concurred with the Lord Chancellor and Lord Finlay in holding that the appeal of the defendant should succeed.

Lord Wrenbury, in delivering a dissenting judgment, referred to the interest taken by many thoughtful persons in the question of birth control during the last 15 or 20 years, and to the work of the National Birth-rate Commission, which sat from 1913 to 1916, and after being reconstituted took evidence in 1918 on questions which included matters dealt with in the plaintiff's books. The plaintiff herself was a member of the Commission, and when the Birth Control Committee of the Commission met on Nov. 7th of the present year, Lord Wrenbury observed, Lord Dawson of Penn was one of those who gave evidence. He mentioned this in order to emphasise the grave importance of the question of birth control, to parents and prospective parents, of personal importance to those working among the poor of public importance, and of national importance to those who had at heart the welfare of the nation. There were what some thought to be grave reasons affecting individual cases for the employment of birth control. Others thought that in no case ought such control to be exercised. He expressed no opinion as to which were right, but strong feelings were roused by the controversy, and hard language might well be used without causing surprise. It was for the jury to decide whether such language, if used, was libellous. The jury had all the evidence, including the plaintiff's books, before them, and the question was for them to decide. Expressing no opinion himself on the matter, he could not say that 12 reasonable jurors might not decide that the expressions used as to "experiment on the poor," and as to a "monstrous" campaign amounting to a crime were not justifiable, especially as the plaintiff had been admitted by her opponents to be bona fide seeking to assist her poorer sisters. In his opinion the majority of the Court of Appeal were right in upholding the verdict upon the answer to the third question, and in giving judgment for the plaintiff in accordance with that verdict. The jury had found in the plaintiff's favour on the question of fair comment and assessed damages, and if their findings were not to have effect, then in his view it followed that there had been, by reason of misdirection, no proper trial of the issue of fair comment, and this would entitle the plaintiff to a new trial.

The judgment of the Court of Appeal was accordingly reversed. Since then we are informed that Dr. Stopes has presented a petition to the Lord Chancellor.

THE MISUSE OF PRESCRIPTIONS.

At a recent inquest near Llanelly, upon the body of a married woman, 43 years of age, the jury returned a verdict that "the death was due to the taking by misadventure of an overdose of medicine containing strychnine, associated with the low physical condition of the deceased due to the morphine, in accordance with the testimony of Dr. Owen Williams. We are of the opinion that no criminal neglect is due to anyone, but that greater care should be exercised in future in labelling medicine containing poison." The story leading up to the death of the deceased, which was

the occasion for the above finding, was contained principally in the evidence of a druggist, who stated that for several years he had supplied the deceased with bottles of medicine in extraordinary quantities, for which frequently she used to send her children or the children of neighbours. A great deal of this medicine was ostensibly under a prescription. The prescription provided for 2 drachms of morphia, but the druggist, recognising the craving of his customer for this drug, reduced the morphia to 1½ drachms, and finally, when she asked that the medicine should be supplied in larger quantities and in greater strength, gave her no morphia in two out of the three bottlesful that she was consuming daily. At a later period she was having three bottles a week of the medicine containing morphia, her purchases being made up to three bottles a day with tonics and purgatives. Among the tonics she used was one containing strychnine, of the danger of which he warned her, but there was no warning written on the bottle last sold to her before her death. Medical evidence based upon the post-mortem examination was given to the effect that death was due to strychnine and not to morphia.

The law does not forbid unlimited repetition in the making up of a prescription, and probably such a limit in all cases would be resented by the public, however desirable it may appear to the medical profession. It would be easier to impose and to enforce limits to the use of any prescription containing certain specified drugs. Probably nothing, except, possibly, the efforts of relatives, would have hindered the woman in this case from drugging herself.

AN ERROR IN DISPENSING.

An action of an unusual character was tried recently by Lord Darling and a special jury. The plaintiffs were Mr. R. R. Boyd and his young son, Geoffrey R. Boyd, and the defendants, Messrs. Savory and Moore, Limited, were sued on the ground of their alleged negligence in dispensing a prescription for the use of the son. In defence they denied negligence, and pleaded that they had acted reasonably in reading the prescription in question, and further that the plaintiff, Geoffrey Boyd, had suffered no damage through their act. Geoffrey Boyd, 22 years of age, was from the age of 11 years subject to epileptic fits, and in 1922 Dr. Henry Head gave for his use a prescription for medicine to contain 1½ gr. of luminal sodium. The defendants made up this prescription at various dates from May, 1922, to March, 1923, and misreading the amount of luminal sodium ordered, always compounded it with half a grain, instead of a grain and a half. The plaintiffs alleged that through this error the youth's recovery was delayed at a time when he was expecting to go into his father's business, and damages were claimed accordingly. Dr. Head, called on behalf of the plaintiffs, described luminal sodium as a "tricky drug," and in answer to a question from Lord Darling said that it was impossible to tell whether a grain and a half would have had any influence in the patient's favour. He explained the circumstance in which he had prescribed it, and in reply to Mr. Eastham, K.C., counsel for the defendants, stated that he was unable to say that the omission of a grain of luminal sodium every night for ten months, the period of the prescription, had had any material effect on the course or progress of the epilepsy. As far as he could say the omission had done no harm.

After reference by Mr. Eastham to the "rather misleading" character of the writing of the prescription, Dr. C. Hinds Howell gave evidence in support of the view that the absence of a grain of luminal sodium had made no difference to the epilepsy, and said that half a grain was a common amount to prescribe. Sir William Willcox agreed, and added that he had first dealt with luminal sodium as a hypnotic in lectures in 1913. It was first used for epilepsy at some time during the war, but was very often ineffective with regard to epilepsy in any dose. In reply to questions raised by the jury, Sir William Willcox said that there was no recognised cure for epilepsy, and that continued use in large doses of such a drug as luminal sodium might cause mental degeneration. He should not attribute an increase in the plaintiff's fits to the diminution in the luminal sodium administered to him.

The jury were unable to arrive at an agreement as to their verdict and were discharged. Mr. Justice Darling gave judgment for the defendants with costs, on the ground that there had been no evidence to go before the jury of any damage resulting from the alleged negligence, even if there had been negligence. A stay of execution was granted in view of a possible appeal.

ROYAL SOCIETY OF MEDICINE.

THE ANNUAL DINNER.

THE annual dinner of the Royal Society of Medicine was held on Nov. 26th at the Hotel Victoria, London, Sir StClair Thomson, the President, presiding over an assembly of some 400 persons. Since their election to the Society women have, of course, been present at the annual dinner, but necessarily only in small numbers. The innovation on this occasion was the permission to members to bring guests of either sex, and the result was to make of the gathering a large series of small dinners flanked by one long, high table.

After the loyal toasts, Sir Auckland Geddes proposed the Prosperity of the Royal Society of Medicine, laying stress on the fact that the great work of the Society, though done directly for the profession, resulted in enormous benefit to the public. The general facilities of the Society, and especially the library, enabled a large mass of doctors to keep abreast, either by the work of the sections or by the consultation of references, with their science. In speaking of the Transactions of the Society, he pointed out that, while there were 4000 members on the roll, their communications to the proceedings were included in 2000 pages. He raised considerable laughter by wondering when the House of Commons would have rules whereby the average in "Hansard" was only half a page per M.P.

Sir StClair Thomson, replying for the toast, pointed out that the motto of the Society was "Life is not worth living if it is not lived well," and commenced his speech by a versicle regretting that speeches had to be made, for, he said:—

> "I like the talk that comes between
> The pottage and the peaches;
> But hail with a dejected mien
> The speeches."

After a criticism of the inarticulateness of Englishmen he paid an eloquent tribute to the prevision of the late Sir Andrew Clark and the devoted service of Sir John MacAlister who, he said, was absent upon his doctor's strict directions. "The ideal," he said, "to which we have attained was foreshadowed by Sir Andrew Clark when he held in 1892–93 the position of President. His wise imagination bodied forth the objects of our existence in the words: 'A Royal Academy of Medicine is calculated to bring together for their common help all the investigators in the various departments of medicine.' Sir Andrew Clark died a few months after, but 15 years had to pass before what he had imagined attained a local habitation and a name. And thereby hangs a regret. For he, who wielded the English language so gracefully, had suggested the title of 'Academy' for our body, just as Mr. James Berry at this table in 1922, when speaking as President of the Medical Society, said that, being a collection of societies, the title of 'Academy' was much more appropriate. That may come yet. But it is only a family matter whether we call ourselves a society or an academy. This amalgamation, shadowed

forth by Sir Andrew Clark, was the endorsement of a scheme at which another man had toiled for years; not a medical man, mark you, but one who loved us as a brother and in return we all wear him in our heart's core, aye, in our heart of hearts. He had worked at it for more than five years before Sir Andrew died; he toiled on it for 15 more years before it was accomplished; he has continued another 17 years to better what he had already bettered. He has served this Society for 37 years. It has been his life's work, and he has given his life to it. It is only his doctor's strict orders which prevent our perpetual secretary, Sir John MacAlister, from being with us to-night."

The President then acknowledged the valuable services of the hon. librarians, Mr. Walter Spencer and Sir Humphry Rolleston, and the hon. treasurers, Mr. C. H. Fagge and Dr. Farquhar Buzzard, adding that a great debt was due to Dr. Arnold Chaplin for undertaking to catalogue, mount, and index the Society's fine collection of over 4000 prints. In thanking Sir Auckland Geddes for the terms in which the toast of the evening had been given, Sir StClair Thomson said: "You, Sir, in coming here to-night and in proposing the health of our Society, have, I assure you, added to your large troops of friends in the two hemispheres. You need not have taken the chairmanship of the Food Inquiry to gain the shortest way to our hearts. We all know and are proud of your record. We have not forgotten that you went through the South African War as a lieutenant in the Highland Light Infantry; that as recently as 1908 you took your M.D. with the gold medal at Edinburgh, and that little more than 10 years ago you were making models in the dissecting room of McGill University in Montreal. Then came your last crowded ten years of glorious devotion to your country—Member of Parliament, Director of Recruiting, Minister of National Service, Minister of Reconstruction, President of the Local Government Board, President of the Board of Trade, Brigadier-General, gassed in France, Principal of McGill University, and His Britannic Majesty's Ambassador to the United States. And you are not yet 46! In France the highest honour that can be given a man is to put on record that he has deserved well of his country. Anyone who visits the Hôtel de Ville in Paris will see that in the last ten years only two names have been added to the lists on the walls—those of Clemenceau and Poincaré. Underneath them are written the simple and thrilling words, 'Ils ont bien mérité de la patrie.' You have deserved well of your country; your profession is proud of you; this society is most deeply grateful to you."

Sir George Blacker proposed the Health of the Guests in a deliberately light vein, and referring to the possession by women of the Parliamentary franchise, said that Sir Douglas Hogg's electoral campaign had led to the unheard-of situation in Harley-street and Wimpole-street that doctors were seen abroad with their wives. Until that occasion it seemed that the medical inhabitants of those streets could never appear with their wives, some of the men being too busy, and the others being engaged in pretending that they were too busy.

Sir Douglas Hogg, the Attorney-General, replied, and pointed out that his profession and that of medicine were the two strictest trade-unions in the country, and had this in common, that their unionism was non-political, while the difference in status was indicated by the fact that doctors, it seemed, could be proceeded against for lapses of conduct, when lawyers enjoyed an immunity owing to the fact that they had taken care to make the laws. Speaking as Member for Marylebone, "a most important medical constituency," he viewed with admiration the amount of gratuitous work which was done by the medical profession, and he wished that the poorer people of the country could receive the same service from lawyers, inasmuch as, during his tenure of office as Attorney-General, he had seen many cases in which free legal assistance was needed almost as badly as free medical assistance.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Measles and Whooping-cough in Edinburgh.

OWING to an outbreak of measles and whooping-cough in Edinburgh a letter was circulated to local practitioners by the medical officer of health. In this notification is invited of first cases occurring in any family and payment of notification has been approved by the town council. The letter points out that the object of the notification is to inform the public health department of the existence of cases of measles or whooping-cough, so that home visitation by qualified fever nurses may be carried out. If, however, a practitioner does not consider it necessary or desirable for visits to be paid by a nurse, a statement to this effect is to be added to the notification form. Where home environment is found to be faulty or likely to be prejudicial to the health of those affected, removal to hospital will be undertaken. The letter terminates with an appeal for coöperation in order to reduce the death-rate from these diseases, especially among children under 5 years of age. Since the adoption of this scheme of notification, 405 cases of measles and 113 cases of whooping-cough have come under notice. As long as the epidemic was confined to the Leith area, where apparently it had origin, one nurse was able to overtake the necessary visits, but with the extension of the diseases to Edinburgh, it was essential for a second nurse to be employed. Up to the present the results from home visiting have not been very encouraging, and in cases where removal to hospital has been considered advisable a certain amount of opposition from parents has been encountered. In cases of scarlet fever or diphtheria no protests have been offered to the removal of children to hospital, but in the case of measles and whooping-cough, parents, not realising the dangers of these conditions, are often reluctant to allow a child to go to hospital, considering home treatment quite sufficient. An endeavour has been made to surmount this difficulty by means of propaganda. A statement is made to the press by the medical officer of health in which he points out that measles and whooping-cough in young children cause a greater number of deaths than diphtheria and scarlet fever, though the two latter are looked upon as much more serious maladies.

Edinburgh Royal Infirmary.

Some interesting details with regard to the financial position of the Edinburgh Royal Infirmary were given on Nov. 26th at the sixth annual meeting of the League of Subscribers, which was held at the Oddfellows' Hall, Forrest-road, under the presidency of Mr. James Campbell. A report submitted by Mr. Russell Paton, the organising secretary, showed that the revenue obtained by systematic collections at public works and places of business in the city and country districts amounted to £20,904, or an increase of nearly £560 over subscriptions obtained last year from similar sources. From reliable estimates it would seem that the individual membership of the League is now about 73,300 for Greater Edinburgh and 23,200 for country districts, an increase of some 2500 over last year's figures. During the year 152 new groups have been added to the League. The workers' contributions from all sources have been estimated at £40,000 per year, which shows how well the work of the institution is appreciated by the working classes. The total expenditure of the infirmary for the past year, it was stated, amounted to £127,500, or an increase of £7700 compared with the previous year. Against this, however, must be placed £78,900 in legacies. An interesting item in the report was the fact that the salaries of the senior nurses had been substantially increased. Reference was made to the offer of £30,000 by the Rockefeller Trust for the erection of a clinical laboratory in the infirmary grounds. It has been decided to accept the

offer, provided the laboratory becomes the absolute property of the infirmary.

At the 243rd anniversary dinner of the Edinburgh Merchant Company held in the Company's Hall it was announced that the Company's Education Board had resolved to give the management of the Royal Infirmary an opportunity of acquiring the buildings and site of George Watson's College. The members of the Company must be congratulated on their generosity, for the offer involves the finding of a new site for the school. Throughout its existence of 243 years the Company has had a reputation for its public spirit.

Aberdeen Medico-Chirurgical Society.

The annual business meeting of the Society was held on Nov. 20th, when the following office-bearers were elected: President: Dr. Peter Howie; Vice-President: Dr. James Crombie; Secretary: Dr. H. Edgar Smith; Treasurer: Dr. George Rose; Editor of Transactions: Mr. G. H. Colt; Librarian: Dr. W. Clark Souter; Recording Secretary: Dr. H. Ross Souper; Assistant Secretary: Dr. Robert Richards; Members of Council: Dr. A. G. Anderson, Dr. G. M. Duncan, Mr. F. K. Smith, and Dr. H. Ross Souper.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Belfast: The Robert Campbell Oration.

THE second Robert Campbell Memorial Oration was delivered in the Medical Institute, Belfast, on Nov. 20th, by Dr. Thomas Houston. Dr. J. Singleton Darling, President of the Ulster Medical Society, occupied the chair, and there was a large attendance of members of the profession from Belfast and Ulster. Dr. Houston, after paying a personal tribute to the late Mr. Campbell, then gave his address on the subject of

Addison's Anæmia.

He first called attention to Thomas Addison's original account of the disease and showed how this masterpiece of clinical observation would be handed down to all future students of medicine. Since Addison's time certain additions to our clinical knowledge of the disease had been made. Hunter deserved the credit of originating the intensive study of the true nature of this remarkable form of anæmia. His researches led him to the view that Addison's anæmia was a specific infective hæmolytic disease, and that the source of the infection was the alimentary canal and the seat of the blood destruction the portal circulation. Hurst had added a predisposing factor to this almost accepted theory of Hunter's, emphasising the view that the achlorhydria which always preceded the onset of the disease was generally congenital and predisposed to the specific infection of the alimentary canal by streptococci or other organisms. The older theories of Cohnheim and Ehrlich were still adhered to by some able writers on the subject. More work required to be done before any of these theories could be generally accepted. Mr. H. Gilford had called attention (THE LANCET, Jan. 13th, 1923, p. 64) to his view that Addison's anæmia might be due to a premature senescence of the blood-forming organs. He pointed out that one of the main objections to such a view was the supposed rarity of the disease in old age. It was questionable, however, whether the disease was so rare in old age as the literature of the subject would lead us to suppose. In old age the patient was not considered a fit subject for clinical investigation and every ailment was ascribed to senile decay. Dr. Houston had seen quite a number of cases of Addison's anæmia in patients over 70 years, and believed that many more would be found if they were looked for. This view would also fit in with certain recent work on blood destruction by Louisa Ashby, who came to the conclusion that the blood destruction that occurred in the disease might be explained by a speeding-up of the physiological processes of blood destruction and the embryonic or senile character of the blood might predispose to this increased destruction.

Dr. Houston then briefly discussed the treatment of the disease by (1) arsenic, (2) hydrochloric acid, (3) blood transfusion, and (4) splenectomy.

Irish Free State: The Local Government Bill.

A debate and division of some interest took place recently in the Dail during the discussion of the Local Government Bill. Section 17 of the Bill proposes to give the Minister power to establish consultative councils for giving him advice in connexion with such matters affecting health as might be specified in an Order. At the same time the Bill proposes to abolish the Irish Public Health Council, which has the power, of its own initiative, to offer advice to the Minister on all matters concerning health. Mr. Johnson, leader of the Labour party, moved the deletion of Section 17 and proposed the substitution of a new section to establish a Public Health Council to advise the Minister. The council would consist of eight persons, representing boards of health, appointed by the Minister after consultation with such councils; four persons representing councils or county boroughs; three doctors, two having diplomas in sanitary science; one dentist, one veterinary surgeon, two nurses, and two midwives. The new section further provided that the Public Health Council should meet at least twice a year, and that payments might be made by the Minister out of moneys provided by the Oireachtas to members of the Public Health Council, and to committees thereof, to such extent as might be sanctioned by the Minister for Finance in respect of travelling expenses, subsistence allowance, and compensation for loss of time.

Mr. Johnson's views were supported by Sir James Craig, the medical member for Dublin University, and by several members of the Labour Party and of the Farmers' Party. It was opposed by a "Business Member" on the ground of expense. The Minister opposed the amendment, and after an irrelevant attack on the medical profession, for which he subsequently apologised, gave as his reason that the existence of a council such as was suggested by Mr. Johnson would lead to friction with his department, and that he preferred to be advised by the Dail rather than by such a council. In the subsequent division the amendment was defeated by 30 votes to 27, the Minister having no support outside his own party except that of the two "Business Members." The narrowness of the Government majority is a great encouragement to those who believe that a council with originative power would initiate a strong health policy.

Dublin Milk.

Under the auspices of the Royal Dublin Society, Dr. J. W. Bigger, professor of bacteriology in Dublin University, recently delivered a lecture on milk. He was chiefly concerned with the condition of the Dublin milk-supply in its relation to health. He stated that Dublin milk, on an average, contained 600,000 bacteria per cubic centimetre in winter and 4,000,000 in summer. Tubercle bacilli of the bovine type were found to be present in 8 per cent. of the milk bought and sold in Dublin. Tuberculosis was very prevalent in cows in Dublin, 1 out of every 12 was capable of communicating the disease. He alluded to experiments carried out under the old and newly devised methods of taking milk from the cows. Consequent on the precautions taken under the new methods they had produced milk that remained sweet for seven and a half days on an average, or three times as long as the milk obtained under the old conditions. Forty-eight per cent. of the milk sold in Dublin might, he said, be condemned as unfit for human food, and it was essential for the health of the community that the public should demand clean milk. He considered the present price of milk excessive. Dealers

were able to supply hospitals and other institutions at contract prices enormously below the figure charged the public. Whether it was good or bad milk, clean or dirty, the same price was charged in Dublin. The law took cognisance of those extracting fats from milk, but not of those selling milk impregnated with bacteria, which was actually poisoning the child life of the city, and he pleaded that some public interest in this question of milk should be aroused. If that could be done, he concluded, it would be possible to obtain a satisfactory milk-supply in Dublin.

Tercentenary of the Founder of the Royal College of Physicians of Ireland.

On Nov. 26th the Royal College of Physicians of Ireland celebrated the 300th anniversary of the birth of its founder, John Stearne, in the presence of the Governor-General of Ireland, of the President and Fellows of the College, of the President and Council of the Royal College of Surgeons, who attended with their mace, and of a distinguished company of visitors. The Registrar of the College, Dr. T. P. C. Kirkpatrick, delivered an oration in honour of Stearne. John Stearne, of English descent, was born in Co. Meath in 1624, and entered Trinity College, Dublin, in 1639. His course of study was disturbed two years later by the outbreak of the Great Rebellion, and he betook himself to Cambridge, where he entered at Sidney Sussex College. After some ten years in England, spent mostly at Cambridge, though he also worked at Oxford, Stearne returned to Dublin as a Fellow of Trinity College. He had studied medicine at Cambridge, and on his return to Dublin he began practice as a physician; while in the College he held, in addition to his Fellowship, the chairs of medicine and of Hebrew. A few years later he was entrusted by the Board of the College with the duty of establishing and presiding over a confraternity of physicians, to be housed in Trinity Hall, a building outside the College, but only a few yards from the gate. Twelve years later this society received from Charles II. a charter as a College of Physicians, Stearne being named as first president. He died three years later at the age of 45. Stearne does not appear to have written any works on medicine, his few publications being concerned rather with philosophy and theology. A vote of thanks to Dr. Kirkpatrick was proposed by the Provost of Trinity College, and seconded by Dr. J. O'Carroll, a past-President of the College of Physicians.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Hadwen Case from the German Standpoint.

CONSIDERED from the standpoint of German legislation and German views the recent Hadwen case[1] presents many points of interest. In Germany a course of treatment such as that adopted by Dr. Hadwen in a case of diphtheria would, it seems, be regarded as malpractice—Kunstfehler. In a recent number of the *Aerztliche Sachverständige-Zeitung*, the journal of medical experts, malpractice is described as a bodily injury, or a prejudice to the health of a patient produced by the neglect of generally adopted principles of medical science. If a medical man, for example, has deliberately withheld anti-toxin treatment this would be, according to the law, a "vorsätzliche Körperverletzung"—deliberate injury to health—a crime punishable with imprisonment up to three years; if the patient lost a limb, or an eye, or became totally unable to work, the medical man would be liable to imprisonment up to five years; if the patient died the minimum penalty would be five to ten years' penal servitude. The consent of the patient does not protect the medical man from prosecution, although he would not be liable to pay damages to the patient. The use of methods which have not received the sanction of the profession as a whole would be criminal where such methods caused injury or death to a patient, but is, of course, not punishable where the outcome has been of benefit to the patient. It is worthy of note that this law does not apply to the medical profession alone; the above rules are part of the general legislation on injuries, whoever may have caused them. In the forthcoming reform of criminal law it is intended to make special provisions in this matter with regard to the medical profession. Prosecution of medical men is indeed very rare, whilst actions for damages on behalf of patients occur rather frequently.

[1] See THE LANCET Special Supplement, Nov. 8th, 1924.

Deterioration of the Air in Berlin.

Berlin enjoyed, before the war, a relatively good and pure air, compared with that of other great cities, but now this has changed altogether, as has been ascertained by careful experiments made in the Hygienic Institute of the University on behalf of the city authorities. The chief cause of the impurity of the air is, as explained by the director of the Hygienic Institute, that the cleaning of the streets has been reduced for reasons of economy, so that more dust develops, notwithstanding the fact that fewer horses are now on the streets; also, the great increase of motor traffic has led to the presence of a greater quantity of petrol fumes in the air; this is the more noxious as motor-car proprietors are inclined to use, for economic reasons, petrol of an inferior quality, and out-of-date carburetters which develop more vapour than the modern ones. A by-law prohibiting the use of obsolete carburetters and of petrol of inferior quality is being considered.

Proposed Reform of the Lunacy Laws.

Proposals made some time ago to unify the legislation with regard to lunacy, which varies in the different German States, have not met with the approval of experts. A new Bill has therefore been drafted for Prussia alone, where the present lunacy laws are somewhat obsolete. The principles of the proposed Bill were recently described by an official of the Ministry for Public Welfare which deals with lunacy laws. It is proposed that to obtain the admission of an insane person to an asylum an application to the police should be required. The application must be made by the family of the patient; in place of the family the Poor-law authority, and in cases of soldiers the military authority, may apply for the admission of the patient. The application must be based on a medical certificate setting forth the nature and the history of the disease and containing a reference to the patient's heredity. The police would be obliged to give their consent when the district medical officer has certified that the admission is necessary for the protection of the patient himself, of his property, and of other persons to whom he may become dangerous. In urgent cases it is proposed that every medical man may certify the immediate necessity of the admission of a patient, and the consent of the family may even be dispensed with. If a patient has been admitted to a private asylum, he must appear personally, within 48 hours, before the district medical officer. Law courts will also be entitled to order that a person should be admitted to an asylum for a period not exceeding six weeks for observation, to ascertain whether or not the person is responsible for his acts. A person may be admitted to an asylum at his own request, but in that case he must appear at once before the district medical officer and may be kept in the asylum only with the consent and on a certificate of that officer. A central board for the control of the asylums under the Ministry of Public Welfare, and local boards for each province, consisting of a Government officer of health, an alienist, and a layman with experience in social matters, are to be established. Every asylum must

be inspected at least once a year without previous notice; the members of the inspecting board must have the opportunity to speak to every patient and they are also entitled to look into the case-books. It is pointed out by the Ministry of Public Welfare that the preliminary of police sanction for admission to an asylum should put an end to wrongful detention. A well-known alienist has protested in the press against the Bill on the ground that the necessity of approaching the police would induce some families to abstain as long as possible from having an insane relative admitted to an asylum. To carry out the work outlined in the proposed Bill the number of police officers would have to be increased, an anomalous proceeding at a time when the number of asylum medical officers has been reduced for reasons of economy.

Broadcasting of Lectures on Hygiene.

Broadcasting has been used in Berlin for lectures on hygienic subjects. The lectures concerned first-aid in accidents and in hydrophobia (a disease which has become rather frequent), the hygiene of dwellings and of travelling, and tuberculosis. It was proposed also to deal with the prophylaxis of venereal diseases, but that proved inadvisable because the lectures would also be heard by children.

The Services.

ROYAL ARMY MEDICAL COLLEGE.

Maj. J. A. Manifold, R.A.M.C., relinquishes his appt. as assistant professor.

ROYAL ARMY MEDICAL CORPS.

Capts. R. B. Price and H. F. Panton (Bt. Maj.) to be Majs. Capt. J. Biggam is restd. to the estabt.

TERRITORIAL ARMY.

Supernumerary for service with the O.T.C.—Lt. F. R. Sandford, from the Gen. List, T.A., to be Lt. for service with the Medical Unit of the London University O.T.C.

TERRITORIAL ARMY RESERVE OF OFFICERS.

Maj. E. T. H. Lea, from Active List, to be Maj.

ROYAL AIR FORCE.

Flying Officer C. V. D. Rose is promoted to the rank of Flight Lt.

DEATHS IN THE SERVICES.

Maj. Robert Carlyle Carlyle, who, with two Syrian medical officers, was among the killed in the Sudan mutiny on Nov. 27th, graduated in medicine and surgery at the University of Edinburgh in 1911. The following year he entered the Royal Army Medical Corps as a lieutenant and was appointed captain in 1915. Two years later he was attached to the Egyptian Army.

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.—The eighth meeting of the Commission was held at the Home Office, Whitehall, on Nov. 27th, Sir Andrew Duncan in the chair. The examination of the representatives of the Hearts of Oak Benefit Society, Mr. Hezekiah Dudley, chairman of the Executive Council, and Mr. J. P. Lewis, C.A., secretary, was continued. Various questions relating to the deposit contributors, the insurance of married women, the scheme of penalties for arrears, the additional benefits, the application of surpluses were dealt with. The Commission announce that the oral evidence given at the meeting of Nov. 13th, 1924, is now on sale in proof form (*1s. 6d.*) at H.M. Stationery Office, Adastral House, Kingsway, London, W.C. It should be understood that this and the similar proofs issued at weekly intervals are subject to correction, and that the evidence as finally published on behalf of the Commission will be the only authoritative record of their proceedings.

INFECTIOUS DISEASES ABROAD.

THE following general summary is compiled from the monthly Epidemiological Reports published by the Health Section of the League of Nations, supplemented, when possible, by more recent information from other sources.

Plague.—In India this year the curve of plague mortality dropped to its lowest point in the last week of July, which is a few weeks later than usual. The curve has since risen steadily to an average of about 500 deaths per week for the country as a whole. In the week ending Nov. 15th no death from the disease was notified in the ports of Bombay, Calcutta, Karachi, and Madras, but there were three in Rangoon. As regards other parts of the world, the following is a list of countries or localities in which the disease has recently occurred:—Europe: Crete (August), Greece, Naples, Paris. Asia: Beyrout, Ceylon, Dutch East Indies, Baghdad, Jaffa, Bangkok, Singapore. Africa: Algeria (August), Canary Islands, Gold Coast, Madagascar, Mauritius, Nigeria (Lagos), Uganda, Union of South Africa. America: Ecuador, Los Angeles (outbreak of pneumonic type with 31 deaths reported up to Nov. 13th).

Cholera.—In India during August the reported cholera cases averaged about 8050 per week and deaths 4850. For the week ending Sept. 27th the figures were 4251 cases and 2422 deaths. Very few cases have recently been reported from other parts of the world.

Yellow Fever.—Sporadic cases continue to be notified from the Gold Coast and from ports of Mexico and other countries in Central America. It is estimated that at San Salvador there were 60 cases between June and September.

Typhus.—The typhus situation in Russia and Eastern Europe at present is believed to be more favourable than in any year since the war, but as regards most of the countries June is the last month for which full statistics are available. In Poland only 246 cases were notified during August; Esthonia, Latvia, Lithuania, Czecho-Slovakia, Jugo-Slavia, Roumania, and Bulgaria were almost or quite free from the disease. The most recent notifications from other countries are: Algeria, week ended Oct. 31st, 4 cases; Chile, week ended Oct. 13th, 20 cases (at Talcahuano); Egypt, week ended Nov. 11th, 14 cases, of which 2 at Cairo; Italy, week ended Sept. 28th, 1 case at Sesto al Reghena; Malay States, week ended Nov. 21st, 1 case: Portugal, week ended Oct. 18th, 1 case at Oporto; Syria, week ended Sept. 30th, 1 case at Aleppo; Turkey, week ended Nov. 8th, 1 case at Constantinople.

Small-pox.—In general the small-pox situation abroad at present is decidedly favourable. Northern Europe (including Scotland and Ireland), the Baltic Republics, and Central Europe as far south as Roumania are almost or quite free from the disease, and it is declining in many other areas where it was prevalent. The following figures indicate the recent incidence in some important countries: France, week ended Oct. 10th, 1 case at Paris; Italy, week ended Oct. 19th, 4 cases; Spain, week ended Nov. 2nd, 5 cases at Madrid; Portugal, week ended Nov. 15th, 1 death at Oporto; Switzerland, week ended Oct. 25th, 2 cases in the Berne Canton, 1 in the Lucerne Canton; Greece, month of September, 4 cases; Algeria, week ended Nov. 10th, 26 cases; Canada, 3 cases at Vancouver, week ended Oct. 11th; United States, 47 cases in California State, week ended Sept. 27th; 7 cases in Oregon and Washington States week ended Oct. 11th.

Enteric Fever.—In many countries enteric fever appears to have been more prevalent this summer than last. The increased summer incidence was particularly marked in the Baltic region (Sweden, Finland, Esthonia, and Latvia). In Denmark, however, only 55 cases were notified during August, as compared with 191 during the same month last year.

In Germany, 1967 cases were notified in the four weeks ending Sept. 6th, as compared with 1680 during the preceding four weeks, and in Italy 1159 cases during the week ending August 23rd, as compared with 373 cases during the previous week.

Scarlet Fever and Diphtheria.—In Germany and the Netherlands the incidence of these diseases during September was somewhat higher than last year. The following are a few recent statistics of deaths in certain cities: Paris, Nov. 1st to 10th, 3 deaths from diphtheria; Amsterdam, week ended Oct. 11th, 1 death from scarlet fever; Berlin, week ended Sept. 27th, 2 deaths from scarlet fever, 3 from diphtheria; Breslau, Cologne, and Frankfort-on-Main, week ended Sept. 27th, 1 death from scarlet fever in each; Leipzig, week ended Oct. 25th, 3 deaths from diphtheria; Munich, week ended Sept. 27th, 2 deaths from diphtheria; Budapest, week ended Sept. 20th, 1 death from scarlet fever, 1 from diphtheria; Warsaw, week ended Nov. 8th, 10 deaths from scarlet fever, 2 from diphtheria.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following table gives some of the principal statistics of four of our largest inland cities for 1923:—

Name of city.	Estimated (R.-G.) mid-year population.	Birth-rate.	Death-rates per 1000 of the population.				Death-rates per 1000 births.		
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Neonatal mortality.	Infant mortality.	Maternal mort. from childbirth.
Birmingham.	946,400	20·1	10·8	1·06	1·15	2·2	31	72	3·5
Sheffield ..	524,200	19·4	11·5	1·03	1·19	2·5	39	90	4·0
Leeds	469,900	18·5	12·7	1·35	1·22	2·5	42	89	5·2
Bradford ..	290,800	18·2	13·7	1·02	1·29	3·0	36	78	4·9

Birmingham.

Dr. John Robertson says that during 1923 the general health of the people of Birmingham reached a higher standard than ever before. For further improvements he pins his faith to a more intensive educational campaign, to which the school, the health nurse, the press, special lectures, and pamphlets must contribute their quota. He thinks the late war has left many people with a somewhat unbalanced mentality. The whims of neurasthenics are too sympathetically dealt with and the question of sex looms too largely in the lives of many city dwellers. While he is convinced that much lies with the individual there is still much to be done by the local authority. He instances the need for better arranged houses in pleasant environment and the total abolition of all the courtyard houses in Birmingham; also the need for greater facilities for outdoor recreation; and, thirdly, the need for permanent allotments. Birmingham, like some other places, had a small outbreak of enteric fever caused by the paratyphoid B bacillus, for which no cause could be assigned. Arrangements have now been made with all the nursing societies in Birmingham to supply a visiting nurse for cases of measles, whooping-cough, and pneumonia on the request of the public health department. For this purpose a grant of 10*s.* per case is made to the nursing society. Unemployment and the housing conditions militate against the prevention of tuberculosis, but, on the other hand, the relief given to distressed persons has been very effective.

The report of the chief tuberculosis officer, Dr. G. B. Dixon, shows that 60 per cent. of all the notified cases of pulmonary tuberculosis were examined during the year. Dental treatment is provided for the patients and artificial dentures on advantageous terms. Dr. Dixon gives a table showing the present condition of patients treated in previous years. Of the patients whose sputum contained tubercle bacilli, 22·3 per cent. of those treated in 1913 are at work regularly, while 26·4 per cent. of those treated in 1919 are working regularly. It is found that in only a limited percentage of cases is it possible to arrive at a correct diagnosis after one or two examinations in the consulting room. For this reason the observation beds at Yardley-road Sanatorium have been found most useful. During 1923 311 cases, about one-fifth of all the sanatorium patients, were admitted to these observation beds for a period varying from two to four weeks. In 41 per cent. a positive diagnosis was the result and in 59 per cent. a negative. Dr. Robertson gives a table showing the percentage of samples of mixed milk found to be tuberculous during the last 17 years. The percentage for the whole period is 8·7, while the percentage for 1923 was 8·2. There is thus no indication that the operation of the milk clauses contributes to the lessening of bovine tuberculosis or tuberculosis of the udder. Cows with tuberculous udders are not necessarily the most infectious cases, so it is not to be expected that the milk clauses would do anything more than remove dangerous milk at an earlier period than if no action were taken. Mr. Brennan De Vine, the veterinary inspector, reports in a useful manner on the Birmingham effort to secure tubercle-free herds. There are now 18 herds in the scheme, 13 of which are breeding herds. All the herds are tested half-yearly. The results show that there are generally some reactors at the half-yearly testing, even in the breeding herds, though six of the breeding herds had no reactors. Cows purchased subject to passing the test are returned to the vendors if they fail to pass. Cows which give a doubtful reaction are isolated and re-tested a month or six weeks later. The number of cows tested for the first time during 1923 under the scheme was 311, and of these 67, or 21·5 per cent., failed to pass. Mr. De Vine's report indicates many of the difficulties to be encountered in securing and maintaining tubercle-free herds. Except in the case of breeding herds the outlook does not appear to be hopeful. Dr. Robertson is enthusiastically in favour of adequate pasteurisation. He thinks that even the inadequate methods of pasteurisation and sterilisation, which have been the rule in Birmingham for some time past, have had their effect in producing a low death-rate from non-pulmonary tuberculosis. A number of firms are now engaged in installing up-to-date pasteurisation plant to comply with the new regulations.

The Carnegie Infant Welfare Institute was opened in October, 1923, and a large number of illustrations of the building are included in the report. In addition to the usual consulting and waiting rooms, there is an observation ward with accommodation for eight non-thriving babies; a sun-balcony, a toddlers' room where the young children can be left while the mother and baby are awaiting their turn, and a demonstration room for lectures on cooking and sewing. There were 126 cases of pemphigus neonatorum with ten deaths, and Dr. Robertson thinks the importance of this disease as a cause of death has not yet been fully realised. The damage done by ophthalmia neonatorum during 1923 was the worst of any year since this disease came under the purview of the public health committee. There were ten cases of serious damage to eyesight, and six of these will probably be blind children. There was a large outbreak of acute anterior poliomyelitis during the autumn. Of 33 cases notified three died, and 25 of the survivors will be left as more or less complete cripples. There were 29 cases of encephalitis lethargica notified with 12 deaths. Of the 17 survivors only four had made

a complete recovery by the end of six months after the attack.

The want of housing accommodation is causing dire distress.

Sheffield.

Dr. Fred. E. Wynne reports that there was an unusual number of cases of enteric fever in Sheffield during the autumn. The cases were distributed throughout the city, and no cause could be assigned for the outbreak. The disease was of a severe type. A table is given in the report showing that of the 17 towns in England and Wales with a population of over 200,000 Sheffield had the lowest death-rate from tuberculosis in spite of the well-known effect of the grinding industry. But the mortality in this industry will not be satisfactory, says Dr. Wynne, until the system of giving out work to the lessees of little, dark, insanitary "wheels" is abandoned in favour of large, economically organised and adequately equipped factories. The large amount of unemployment in the grinding trade has probably been a factor in reducing the incidence of tuberculosis.

The report of Dr. John Rennie, the tuberculosis officer, shows that the dispensary is being well used by the medical profession in Sheffield as a consultation centre. There were no less than 2157 "suspects" examined and the observation beds in the hospitals were largely used. Thirty-eight places are reserved at the two open-air schools for children selected by the tuberculosis medical officer. The fact that 23·7 per cent. of the cases were notified before tubercle bacilli had appeared in the sputum is evidence that pulmonary tuberculosis is being notified at an earlier stage. Infant mortality showed an increase in 1923, the rate being 90 as compared with 82 in the previous year. There were 646 new houses certified in the 12 months ending March 31st, 1924, 278 of which were erected by the corporation. The list of applicants for municipal houses has become hopelessly unwieldy, and many applications of a most pathetic description are received.

The report of Mr. J. S. Lloyd, the veterinary inspector, shows that of 957 samples of mixed milk 7·1 contained tubercle bacilli. The system adopted by the veterinary staff of making immediate microscopical examination of suspected milk has been continued with satisfactory results. By this means cows with tuberculous udders have been eliminated from the milk-supply of the city at an earlier period, and the delay caused by waiting for the result of the "guinea-pig" test has been avoided.

Leeds.

Dr. J. Johnstone Jervis says that more than 60 per cent. of the occupied houses in Leeds are of the back-to-back type. He divides them into three classes —the modern, very good; the old, very bad; and a third class, midway between the other two. It was impossible to analyse the 1923 deaths so as to indicate how many occurred in each of the three classes, but 66·4 per cent. of the total deaths occurred in back-to-back houses, which only slightly exceeds their due proportion. Cremation makes very slow progress in Leeds. During 1920–23 the average annual cremations were about 12, as compared with 11 in 1905–08. Dr. Jervis draws attention to the inadequate number of beds provided at the Leeds General Infirmary. He thinks 1200 beds should be provided instead of 700 as at present. He points out, however, that there is ample accommodation in the Poor-law infirmaries to meet the deficit if it could be brought into use. Perhaps the two most dangerous street nuisances of our time, says Dr. Jervis, are the spitting man and the ill-trained dog. Regulations with regard to underground sleeping rooms made under the Housing, &c., Act of 1909 came into force in September, 1923, and it will now be possible to exercise stricter supervision over owners of flats who allow rooms in basements to be used as sleeping rooms. Progress has been made with regard to the smoke from factory chimneys. One noticeable improvement tending towards smokeless combustion has been effected in the case of a large number of Lancashire boilers by the simple process of shortening the length of the furnace and working on a reduced grate area. The Milk Designations Order has failed to elicit the response anticipated. One licence was issued during the year for certified milk and one for pasteurised milk. In addition the two corporation farms were granted licences by the Ministry of Health for the production of Grade A (tuberculin-tested) milk. The licences were, however, revoked at the end of the year, and these two farms now produce Grade A milk. Only 62 samples of "outside" milk were examined for tubercle bacilli, but five of these, or 8·1 per cent., were found to be infected. Dr. Jervis draws attention to the unsatisfactory state of the law for ensuring the satisfactory disposal of the tuberculous cows found by following up, and would like to see the Tuberculosis Order of 1914 brought into operation. He further states that the cows and cowsheds in the rural districts visited are in a deplorable condition. The accommodation at the Leeds public abattoir is quite insufficient, and its extension and improvement are urgently needed. In last year's report Dr. Jervis expressed his dissatisfaction with the results which were being obtained by the Leeds Antituberculosis Organisation. Towards the end of 1923 he made a special report on the subject which indicated that the tuberculosis mortality-rate had not improved as much in Leeds as in other large towns. In fact, his figures show that the death-rate from pulmonary tuberculosis during 1903–12 was 1·30, as compared with 1·34 for the decennium 1913 to 1922. Dr. Jervis makes several important recommendations, and the reorganisation of the scheme is now in progress.

Bradford.

Dr. John J. Buchan reports that rapid progress is being made with the conversion of privies; 1945 were dealt with in 1923, and there now only remain 5547 to be dealt with. Fish-frying is regulated as an offensive trade. There were 49 applications during the year for permission to establish new fish-frying businesses, all of which were refused. 1046 observations were made of furnace chimneys, and 182 chimneys were found to be either offending or working on the border-line of offence. Proceedings were taken 21 times—namely, against eight owners, six engineers, and seven stokers. The penalties and costs only totalled to £24 18s. Dr. Buchan states that many stokers of long experience still retain the practice of covering all the fires at one charge of fuel.

It is estimated that the daily consumption of milk in Bradford is 14,600 gallons, of which 8000 are produced within the city and 6600 outside. There are about 4324 cows stalled inside the city. No mention is made of veterinary inspection, but judging from the experience of Sheffield it ought to be possible to find about 30 tuberculous udders annually among this number of cows. Dr. Buchan says cooling of the milk is not practised to a sufficient extent. Only 105 samples of mixed milk were examined for tubercle bacilli, of which four were found to be infected. The municipal milk depôt obtains its milk from six sources outside the city and about one-eighth of its supply is Grade A (tuberculin tested) milk. Of the 5290 births, midwives attended 3607, only 64 being attended by untrained midwives. Nearly half of the midwives' cases (actually 1531) were attended by the municipal midwives. The supervision of the midwives is undertaken by a woman medical officer, who also does antenatal work and directs the visiting of the expectant mothers done by the municipal midwives. The antenatal visiting of expectant mothers who have engaged non-municipal midwives is undertaken by the health visitors. There is much serious overcrowding. At the end of the year applicants for new houses numbered 5135.

Dr. Buchan's report as school medical officer contains a diagram which indicates the very complete arrangements made by the Bradford Education Authority for dealing with every kind of child. The

X ray treatment of ringworm has been successful. Among the 1792 children treated there has not been a case of recurrent ringworm nor one where there was not full re-growth of hair. In regard to sight deficiency the Bradford authority adopt the practice of supplying the spectacles needed and recovering the cost from the parents. During 1923 1370 pairs of spectacles were supplied and it was only found necessary to remit the cost, owing to the circumstances of the family, in 93 cases. The school dentist, Mr. B. North, reports that 29,197 children were inspected by the four whole-time dentists, 2863 of them being secondary school-children. About 75 per cent. needed treatment. The beautifully situated open-air school at Thackley has accommodation for 190, but this is already found to be insufficient. Some relief will be obtained by the increase of the accommodation at the physically defective school from 190 to 256. The myope school was transferred to a specially constructed and designed open-air school at Daisy Hill, on a site with a southern aspect about 700 feet above sea-level, on July 16th. The benefit to the children has been great.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 22ND, 1924.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 74; scarlet fever, 2099; diphtheria, 1135; enteric fever, 55; pneumonia, 1083; puerperal fever, 40; cerebro-spinal fever, 6; acute poliomyelitis, 19; acute polio-encephalitis, 2; encephalitis lethargica, 43; continued fever, 1; dysentery, 12; ophthalmia neonatorum, 128. There were no cases of cholera, plague, or typhus fever notified during the week. Of the cases of small-pox 15 were notified from Derbyshire (Derby 11, Bolsover 1, Chesterfield R.D. 3), 16 from Lancaster (Ashton-under-Lyne), 4 from Lindsey (Glanford Brigg R.D.), 14 from Yorks, North Riding (Middlesbrough 11, Redcar 1, Scarborough 2).

Deaths.—In the aggregate of great towns, including London, there were 5 deaths from enteric fever, none from small-pox, 13 from scarlet fever, 31 from diphtheria, 50 from measles, 53 from influenza. In London itself the deaths from diphtheria numbered 12 and from infantile diarrhœa 20.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the committee of the Fund 37 cases were considered and £555 voted to 33 applicants. The following is a summary of some of the cases relieved:—

Widow, age 70, of F.R.C.P. Edin. who practised in the Isle of Wight and died last month. Applicant's late husband was in receipt of £2 3*s.* 4*d.* a month from the Fund from June of this year as he had to give up his appointment owing to ill-health. The Royal College of Physicians granted applicant £25 towards funeral expenses and friends gave £10. Applicant is left without means and the Fund voted her a special grant of £10 and £26 in 12 instalments.

Widow, age 58, of M.D. who was a medical officer for 21 years in West Africa and died in April of this year. Applicant has let her flat furnished and is staying with her married daughter whose circumstances do not permit her to help her mother to any great extent. They hope to be able to get a house later so as to take in boarders. The son is at present unable to help his mother. Voted £10.

Widow, age 63, of L.R.C.P. Edin. who practised in Essex and died in 1915. Applicant has been able to help herself up to the present by taking various posts, but had an accident which injured her ankle and she is now lame. Her only income is the eighth share of some property amounting to £40 per annum, but this is not always regularly paid. Her rent is 30*s.* a week. Voted £26 in 12 instalments.

Widow, age 51, of M.D. Durh. who practised in Nottinghamshire and died in 1899. Applicant has paralysis in legs and feet and has tried to help to support herself by teaching music but the average amount received this year was 7*s.* 6*d.* per week. The case was referred to the Fund by the St. Andrew's Society who are allowing her £39 and gave a grant of £5 to help her to canvass for a National Benevolent Institution annuity. The N.B.I. also gave her £12. Voted £18 in 12 instalments.

Widow, age 63, of L.R.C.P. Edin. who practised at Brighton and died in July this year. The long illness of her husband, who was disabled by an accident, resulted in their savings being exhausted. Applicant has managed to let her room for the last three months and received £8 18*s.* 3*d.* The Lodge granted her £10 10*s.* Inclusive rent is £43 per annum. Voted £18 in 12 instalments.

Daughter, age 50, of M.R.C.S. Eng. who practised in Notts and died in 1895. Applicant suffers from tabes dorsalis and finds it hard to support herself. When able she makes sweets and cakes. Her only income apart from this is an annuity of £40 from the Army Officers' Benevolent Fund. Rent amounts to £33 per annum. Voted £18 in 12 instalments.

Subscriptions may be sent to the hon. treasurer, Sir Charters Symonds, at 11, Chandos-st., Cavendish-sq., W. 1.

THE GENERAL MEDICAL COUNCIL.

PENAL CASES.

THE winter session of the General Medical Council opened on Nov. 25th; Sir DONALD MACALISTER presided. His address appeared in THE LANCET of Nov. 29th. Thirteen penal cases came before the Council during the session. The cases were heard in public; the Council deliberated upon them in camera, and the decisions were publicly announced as usual. Two medical cases had been adjourned from previous sessions of the Council. Three names were erased from the Medical Register.

TUESDAY, NOV. 25TH.

The Case of Charles Gilroy King.—The Council proceeded to the consideration of the case of C. G. King, registered as of Pollokshaws-road, Glasgow, L.R.C.S. Edin., M.B., C.M. Glasg., adjourned from Nov. 28th, 1923.

C. G. King was convicted at the sheriff court of Lanarkshire, at Glasgow, on June 21st, 1922, of procuring drugs from a chemist and failing to supply prescriptions and to enter particulars of the said drugs or any portion thereof in a day-book or register kept for the purpose, contrary to the Dangerous Drugs Act, 1920, and regulations made thereunder, and fined £50 or 30 days' imprisonment, and convicted at the same court on June 25th, 1923, on a similar charge, receiving a similar sentence. These prosecutions had been undertaken by the Home Office, whose medical inspector had brought the facts to light. Part of the drugs procured had been dispensed to patients in an ordinary manner, but most of the supply went to Dr. King's wife, who was an addict; it appeared that Dr. King was completely under his wife's influence, and in spite of promises made after the first visit of the Home Office medical inspector, no better care was taken in respect of the registering of drugs. The Home Office authorisation under the Dangerous Drugs Act had been withdrawn from Dr. King, but no question arose as to his having attempted to traffick in these drugs. The Council considered that Dr. King had not fully apprehended his responsibilities under the Dangerous Drugs Act; judgment was postponed for 12 months, with the usual proviso as to unexceptionable behaviour in the interval.

Two favourable reports as to the conduct of Mr. King from medical men practising in his neighbourhood were put in, and a third report from Sir Robert Wilson, of Glasgow. The Council then deliberated on the case in camera and the President announced their decision, that the Council had accepted the evidence in favour of Mr. King and had decided not to direct the Registrar to erase his name from the Medical Register.

The Case of Haydn Brown.—The Council considered the case of Haydn Brown, registered as of Cavendish-square, W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you have sought to obtain patients or to promote your own professional advantage by means of an article under your name and professional qualifications, and containing also your portrait, published in *John Bull* of July 19th, 1924, entitled 'Childbirth: Amazing New Discovery!' And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

All the members of the Council were supplied with a copy of the issue of the publication referred to in the charge. Dr. Haydn Brown attended in answer to his notice and explained that he had really no answer to make to the charge, but that he was ready to reply to any questions put to him. In the course of cross-examination he stated that he was rung up on the telephone by *John Bull* as the result of a book which he had published and was asked to write an article on some subject of interest. He accepted the invitation and suggested maternal mortality from child-birth as a suitable subject. He sent typewritten notes of the article to the publication mentioned and shortly afterwards received a typewritten proof which he was asked to approve. He was in a great hurry at the time and read it through

quickly and gave his approval. The article as it appeared was somewhat different from the notes which he sent in. In some respects the article, as printed, was, he thought, stronger in its language, and he did not think he had approved the headings. Dr. Brown, however, produced a copy of his original notes and handed them in to the President for comparison with the article as it appeared. The President expressed the opinion that there was not much essential difference between the printed article and the notes, and that in some cases the language used in the notes was stronger than that in the printed article. In further cross-examination Dr. Brown explained his strong belief in his "discovery" and his inability to get the matter taken up in the medical press. He therefore welcomed the opportunity of appealing to the public through the columns of *John Bull* with the idea that the public would then appeal to their doctors to give them the benefit of the new treatment. He himself had given up obstetrical practice 15 years ago, but before doing so had satisfied himself as to the value of "autonomous relaxation." He thought he had tried it in two or three cases. He had used "autonomous relaxation" extensively during the last 15 years, but not in "labour" cases. Dr. Thomson Brown, referred to in the article, had been a pupil of his with regard to "autonomous relaxation." In reply to the President, Dr. Haydn Brown explained that the system was the result of some kind of communication or suggestion from doctor to patient, and that it was a matter of opinion as to whether automatic or autonomous was the better term. When he wrote the article he realised that his appearance before the General Medical Council might be the result. At the same time he realised that such a result would give even greater publicity to the new treatment which he was so anxious to introduce.

The Council then deliberated on the case in camera, after which the President announced its decision as follows:—

"Mr. Brown: I have to inform you that the facts alleged against you in the notice of inquiry having been proved to the satisfaction of the Council, the Council have judged you to have been guilty of infamous conduct in a professional respect, and have directed the Registrar to erase your name from the Medical Register."

The Case of Jonathan Allan Thornhill.—The Council proceeded to the consideration of the case of J. A. Thornhill, adjourned from the May session.

This practitioner, registered as of Ingleside, Newnham, Glos., L., L.M. R.C.P. Irel., L., L.M. R.C.S. Irel., had been summoned to appear before the Council on the following charge: "That being a registered medical practitioner: (1) On April 15th and 18th, 1923, while attending a Mr. J. P., who was seriously ill from influenza, you were so far under the influence of drink that your power of judgment and sense of responsibility were affected to a degree rendering you unfit to be in charge of a serious case of illness. (2) On April 23rd, 1923, you gave to the said J. P. a National Health Insurance certificate stating that you had examined him on that date and that he was incapable of work by reason of broncho-pneumonia, whereas you had not seen or examined the said J. P. on that date or since April 18th, 1923; which certificate was untrue, misleading, or improper; and that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect." The Council found that the first part of the charge had not been proved to their satisfaction, and as regards the second part they suspended judgment till November of this year.

Two testimonials as to Dr. Thornhill's satisfactory conduct during the period of probation from brother practitioners, and one from a minister of religion were submitted. In reply to the President, Dr. Thornhill gave his assurance that he would in future exercise due care in the issue of certificates. The Council deliberated in camera and the President announced its decision that the Council did not see fit to direct the Registrar to erase the name of Jonathan Allan Thornhill from the Medical Register.

The Case of Kul Want.—The Council proceeded to the consideration of the case of Kul Want, of Rock House, Retford, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., who had been summoned to appear before the Council on the following charge:—

"That being a registered medical practitioner, you on June 30th, 1924, signed and issued the following certificate, viz.:—

30.6.1924.

I HEREBY CERTIFY that *F. B.*
residing at *14 George Street*
is suffering from *Bronchitis*
and is unable to follow his employment *school for 14 days.*
K. WANT,
Surgeon.

—whereas you had not seen or examined the said F. B., who was, in fact, quite able to attend school, which certificate was untrue, misleading, or improper. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The Council's solicitor put in the statutory declaration of Mr. Hill, schools attendance officer of Retford, and called Mr. Hill as a witness to prove the facts stated in the charge. Mr. Want went into the witness-box and explained that he had a long attack of bronchial asthma during the summer of 1924 and was confined to bed for a considerable period. On June 30th he was ill in bed and came down feeling very bad to see some patients, having at the time no locum tenens. Among those waiting was Mrs. B., who said her son F. had a similar attack of bronchitis to that for which Mr. Want had previously attended him. She asked to be supplied with the same medicine as the boy had had before. She then asked for a certificate that he was unfit to attend school. Mr. Want was expecting a new locum tenens on this day and gave the certificate, thinking that the new locum tenens would be able to visit the Broughtons when he arrived. As it turned out the new locum tenens did not arrive until July 2nd. Mr. Want further stated that the giving of a certificate under these circumstances was an isolated occurrence, and he gave an assurance that he would exercise greater care with respect to the signing of certificates in future. Mr. le Brasseur submitted testimonials as to the esteem in which Mr. Want was held in Retford and as to his good public work.

The Council deliberated on the case in camera, and the President announced its decision that the Council found the facts in the charge proved and that Mr. Want's explanation was no excuse for the laxity shown in the issue of the certificate. The Council were, however, prepared to accept Mr. Want's statement that this was an isolated occurrence and his assurance that he would exercise great care in the issue of certificates in the future.

WEDNESDAY, NOV. 26TH.

The Case of John Evans.—The Council then proceeded to the consideration of the case of John Evans, of High-street, Yiewsley, Middlesex, M.R.C.S. Eng., L.R.C.P. Lond., who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you issued seventy-nine medical certificates required for National Health Insurance purposes (Form Med. 40 Revised) to an insured person—namely, one George Stevens—in respect of the period from Sept. 5th, 1923, to March 11th, 1924, including the final certificate dated March 11th, 1924, without seeing the said George Stevens on or between these dates and without any medical examination of the said George Stevens, such certificates being untrue, misleading, or improper. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The Council's solicitor showed that the offence mentioned in the charge had been the subject of an inquiry by the Insurance Committee, and that Mr. Evans had been fined £30 by the Minister as a result of the findings of the Insurance Committee and that the documents with regard to the inquiry had been forwarded to the General Medical Council. Mr. Williams, solicitor, appeared for Mr. Evans and sub-

mitted declarations from Mr. Evans, from the dispenser of Mr. Evans, and from the patient, George Stevens, all three of whom were called as witnesses. Mr. Evans stated that Stevens suffered from obscure abdominal symptoms and that, not being satisfied with his progress, he recommended him to attend St. Mary's Hospital, but continued to issue weekly certificates stating that Stevens was unable to work during the period mentioned in the charge because he thought Stevens was still attending the hospital. He thought it was his duty to issue these certificates as panel doctor because Stevens would be unable to obtain his money without the certificates. The dispenser gave evidence that the weekly certificates were usually called for by Stevens's daughter, aged about 14, or Stevens's son, aged about 10, and that she frequently asked the children if their father was still attending the hospital. The patient, George Stevens, stated that he was asked to visit the regional officer on March 11th, 1924, and that he was informed that he was fit for light work. He then visited Mr. Evans and received the final certificate. Mr. Evans admitted that he had seldom seen Stevens during the whole period of the issue of the weekly certificates, although each certificate certified that he, Mr. Evans, had seen Stevens on the date of issue of each certificate.

The Council deliberated on the case in camera. The President announced its decision. The Council found that the charge was not proved with regard to the final certificate, but that it was proved with regard to the bulk of the certificates. The Council considered there had been very great laxity in the issue of these certificates deserving of severe censure. They took a serious view of the case and judgment would be postponed until the session of the Council in November, 1925, when Mr. Evans would be required to submit testimonials as to his conduct from professional brethren or other persons of repute.

The Case of William Lovell.—The Council proceeded to the consideration of the case of William Lovell, registered as of Westbere-road, West Hampstead, N.W., L.S.A. Lond., M.R.C.S. Eng., L.R.C.P. Lond., who had been summoned to appear before the Council on the following charges:—

(*a*) "That you have been convicted of the following misdemeanours, viz.: (1) On Sept. 15th, 1905, at the West London Police-court, of being drunk and disorderly, for which you were fined 7*s.* 6*d.*; (2) on Sept. 19th, 1913, at the Marylebone Police-court (under the name and description of Harry Johnson, clerk), of being drunk, for which you were fined 5*s.* and 18*s.* costs; and (3) on April 4th, 1917, at the Marylebone Police-court, of being drunk, for which you were fined 10*s.*; and

(*b*) "That, being a registered medical practitioner, and a Lieutenant in the Royal Army Medical Corps, you were on April 5th, 1918, tried by a general court-martial in East Africa on a charge of drunkenness whilst on active service, of which charge you were found guilty and sentenced to be dismissed from His Majesty's Service, the finding and sentence being duly confirmed.

"And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

The Council's solicitor showed that various letters of apology had been received from Mr. Lovell with regard to the charges, and that in 1918 Mr. Lovell's name had been erased from the Register owing to rumour that he was dead. Two letters were put in from Mr. Lovell and his wife, but Mr. Lovell did not attend.

The Council deliberated on the case in camera, and the President announced its decision that the charges were found to be proved and that the Registrar had been directed to erase the name of William Lovell from the Medical Register.

The Case of Charles Adolphus Sampson.—The Council proceeded to the consideration of the case of Charles Adolphus Sampson, registered as of Harley-street, London, W., L.S.A., L.M.S.S.A. Lond., who had been summoned to appear before the Council on the following charge:—

"That, being a registered medical practitioner, you have sought to obtain patients or to promote your own professional advantage by means of an article contributed by you to the *Daily Express* of Sept. 4th, 1924, entitled 'Psycho-Analysis is Dead, by Dr. Charles Sampson (Director of the London Clinic of Applied Psychology and Psycho-therapy).' And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

Mr. Oswald Hempson, solicitor of the Medical Defence Union, appeared for Mr. Sampson. The Council's solicitor read extracts from the article in the *Daily Express*. Mr. Sampson gave evidence in his own behalf. He said his was a consulting and treatment practice and that he only saw cases sent to him by other doctors. He explained the genesis of his article. An article by Dr. Herbert Bousfield appeared in the *Sunday Express* boosting "Psycho-analysis." In consequence he had requests from patients and also verbal requests from medical colleagues to answer the article. He rang up the *Sunday Express* and asked if they would be willing to insert an article by him as a rejoinder to Dr. Bousfield's article. They agreed to do so and he prepared his article and sent it in. He heard nothing more until on returning from abroad he was informed that the article had appeared in the *Daily Express*, and was congratulated by the editor of a medical paper on his article. He rang up the *Sunday Express* but was unable to find out how his article had got into the *Daily Express*. The change of paper did not fulfil his purpose as the article no longer appeared as a rejoinder to the article of Dr. Bousfield. The sub-headings in the article were not his and no proof was submitted to him for correction. He was surprised to receive a cheque for £3 3*s.* for the article, as he had expected no payment. In answer to the President, he said the article was not intended to be self-laudatory or egotistical, but his desire was to show forcibly the harm done by psycho-analysis. He had no influx of patients since the writing of the article and still only saw cases sent him by other doctors. The clinic referred to in the article was carried on at his own house for the benefit of patients sent to him by other doctors as unable to pay fees. The clinic was conducted on the same lines as the mother-clinic in Paris, on the staff of which were many well-known French doctors. He knew several doctors in this country who were using successfully the same treatment as that adopted at the London and the Paris clinic. The London clinic was established in 1908. Sir Herbert Waterhouse testified in favour of Mr. Sampson, whom he had known for 23 years. He knew that Mr. Sampson had treated many soldiers suffering from shell-shock and many hysterical women at his clinic and had taken an infinity of trouble without getting a penny for it. Dr. Hubert Roberts (senior surgeon, Queen Charlotte's Hospital) also expressed his high opinion of Mr. Sampson and his work. He had known Mr. Sampson for five years and had seen a good deal of him as Mr. Sampson was actually his tenant. Mr. Sampson was a most unlikely man to advertise himself for possible material benefit. Dr. Roberts's complaint against him was, on the contrary, that he made appointments with paying patients and failed to keep them.

The Council deliberated on the case in camera. The President announced its decision. The Council found the charge with regard to the writing of the article to be proved and thought it was a most improper article to communicate to the lay press. The Council, however, did not think that Mr. Sampson had written the article for the purpose of obtaining patients or self-advertisement, and accepted his assurance that he would be more careful in future, and the testimony in his favour given by his medical colleagues. There would be no judgment.

THURSDAY, NOV. 27TH.

The Case of Patrick Joseph Corcoran.—The Council then proceeded to the consideration of the case of Patrick Joseph Corcoran, registered as of Ballycastle, Co. Mayo, M.B., B.Ch., N.U. Irel., who had been summoned to appear before the Council on the following charge:—

(*a*) "That, being a registered medical practitioner, and a Lieutenant in the Royal Army Medical Corps, you were on

March 15th, 1915, tried by a general court-martial on a charge of having been drunk at Bethune, of which charge you were found guilty and sentenced to be dismissed from His Majesty's Service. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

(*b*) "And that you have been convicted of the following misdemeanours, viz.: On July 23rd, 1924, at the Clerkenwell Police-court, of being drunk whilst in charge of a motor-car, for which you were fined 40*s.* and £10 10*s.* costs, and your licence was suspended for three months and endorsed; and on August 14th, 1924, at the South-Western Police-court, of driving a motor-car negligently, for which you were fined £5 and £5 5*s.* costs."

Mr. Hempson, of the Medical Defence Union, appeared for Dr. Corcoran. The facts of the court-martial were reported to the Council by the Judge Advocate-General, who also reported that Dr. Corcoran had been reappointed to a commission on Nov. 9th, 1918. Dr. Corcoran gave evidence in his own behalf and stated that he was ordered to France in October, 1914. He was first sent to a base hospital and volunteered for the front. When on a day's leave at Bethune he dined with friends. At this time recruiting in Ireland was bad and he lost his temper owing to some insulting remarks made about his country. He was court-martialled and did not attempt to defend himself. He was reinstated in the army in 1918 and gazetted out as captain in 1920. He had contracted malaria during service. He was in practice at Battersea, in partnership with Dr. M. J. Macaulay. The two police-court prosecutions had reference to what occurred on July 11th, 1924. July 11th was the first day of his holidays. He was feeling the effects of the malaria and had no breakfast, but a whisky and soda instead. He had arranged to meet his people at Euston and motored in. Still feeling bad he had another whisky and soda and became unfit to drive the car. He was taken to the police-station and detained for three hours. After which he drove to Euston and conveyed his people to their rooms in Guilford-street. In the evening he drove home, and about midnight he started out to visit his partner to explain the occurrence at the police-court. He came into collision when quite sober and this constituted the second police-court charge. A letter was put in from Dr. Corcoran's partner stating that Dr. Corcoran had given complete satisfaction in the practice, and that apart from this single occurrence there was absolutely nothing against him.

The Council deliberated on the case in camera, and the President announced its decision that the Council trusted Dr. Corcoran's assurance that he would be an abstainer for the rest of his life and had not seen fit to instruct the Registrar to erase his name from the Medical Register.

The Case of Alexander Dawson Reid.—The Council then proceeded to the consideration of the case of Alexander Dawson Reid, registered as of High-street South, East Ham, E., M.B., Ch.B. Aberd., who had been summoned to appear before the Council on the following charge:—

(*a*) "That, being a registered medical practitioner, and a Lieutenant in the Royal Army Medical Corps, you were on August 16th–17th, 1917, tried by a field general court-martial on a charge of being drunk in the field, of which charge you were found guilty and sentenced to be dismissed from His Majesty's Service. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

(*b*) "And that you have been convicted of the following misdemeanours, viz.: On December 1st, 1919, at the East Ham Police-court, of being drunk whilst in charge of a motor-car, for which you were fined 40*s.* and 7*s.* 6*d.* doctor's fee, or 31 days' imprisonment; on Feb. 9th, 1923, at the Stratford Police-court, of being found drunk, for which you were fined 10*s.* and £2 2*s.* costs, or fourteen days' imprisonment; and on Sept. 16th, 1924, at the West Ham Police-court, of driving a motor-car in a dangerous manner, for which you were fined £15, or two months' imprisonment."

Mr. Hempson, of the Medical Defence Union, appeared for Dr. Reid. Mr. Harper, the Council's solicitor, wished to amend the charge on the information received from the Judge Advocate-General that there had been two court-martials in the case of Dr. Reid. The first court-martial was on May 9th, 1917, and resulted in forfeiture of seniority of rank. The second court-martial was in Palestine. In both cases the charge was of being drunk. Dr. Reid gave evidence in his own behalf and explained that as the result of an attack of blood poisoning he had become subject to giddiness. At the time of the first court-martial he was just recovering from enteric fever and had heard of the death of his brother in France. He had had some whisky, came out of the club, and was getting into a trap when the pony started. He fell into the trap and a senior officer who saw the occurrence assumed that he was drunk. Dr. Reid also denied that he was drunk on the occasion charged at the second court-martial. He was surprised at receiving the notice of the second court-martial and resigned his commission. The court-martial was held, nevertheless, and he pleaded "Not guilty." He attributed the results to the fact that his physical disabilities were not understood. After leaving the Service he took a practice at East Ham which he had had for seven years, and worked up from £500 to £1400 in value. He denied that he had been drunk on any of the occasions included in the police-court charges. On the third occasion he was charged with being drunk, but this charge was quashed on appeal, and Sir J. Purves Stewart gave evidence as to his liability to attacks of giddiness. Evidence was given in support of Dr. Reid by a medical friend, who had known him as a student and was able to speak as to the great change in him as the result of the attack of blood poisoning. Mr. Robert Crosby, manager of Barclay's Bank at East Ham, who had known Dr. Reid intimately for seven years, and a veterinary surgeon in East Ham, who had known him intimately for two years, gave evidence as to Dr. Reid's habitual abstemiousness. Mr. Hempson pointed out that the only occasion on which Dr. Reid had made an appeal against the conviction for drunkenness had been successful. It was admitted that he had had some drink on each of the occasions referred to, but if a man with his physical disabilities smelt of drink it was quite sufficient for a stranger to assume that he was drunk.

The Council deliberated on the case in camera, and the President announced its decision that the Council found the charges proved, but under the circumstances had decided to postpone judgment for 12 months, at the end of which time Dr. Reid would be required to produce the evidence of persons of repute in his neighbourhood as to his conduct. Dr. Reid gave an assurance to the Council that he would abstain altogether from alcohol in the future.

The Case of David Williamson Anderson.—The Council then proceeded to the consideration of the case of David Williamson Anderson, registered as of Princess-road, Seaham Harbour, Co. Durham, L.R.C.P., L.R.C.S. Edin. L.F.P.S. Glasg., who had been summoned to appear before the Council on the following charge:—

"That you have been convicted of the following misdemeanours, viz.:—

"(*a*) On April 10th, 1923, at the Newcastle-upon-Tyne Police-court, of being drunk, for which you were fined 10*s.*

"(*b*) On May 8th, 1924, at the South Shields Police-court, of being drunk whilst in charge of a motor-car, for which you were fined 10*s.*, and ordered to pay for use of ambulance; and

"(*c*) On July 10th, 1924, at the Gateshead Police-court: (1) Of being drunk in charge of a motor-car, for which you were fined 40*s.*, or fourteen days' imprisonment; (2) of driving to the danger of the public, in contravention of the Motor Car Act, 1903, for which you were fined £20 and ordered to pay the solicitor's fee of £2 2*s.* and witnesses' fees of £1 16*s.*, or fourteen days' imprisonment; and (3) of failing to give audible warning, in contravention of the Motor Cars (Use and Construction) Order, 1904, for which you were fined 20*s.*, or 14 days' imprisonment."

Mr. Harper, the Council's solicitor, stated that no defence or answer had been sent in by Mr. Anderson, who was not present. Mr. Anderson had, however been in attendance during the previous day.

The Council deliberated on the case in camera, and the President announced its decision to adjourn the case until the following day in order to give Mr. Anderson another chance of being present.

The Cases of John Joseph Brennan, Francis Pulteney Flood, and Vivian Thomas Pearce Webster.—The Council then proceeded to the consideration of the following three cases, taken together. (1) John Joseph Brennan, of Maeryrhaf, Merthyr Tydfil, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., who had been summoned to appear before the Council on the following charge :—

"That, being a registered medical practitioner, you signed and issued a certificate dated March 26th, 1924, that one William Jones was suffering from weakness after abscess of ankle and required temporary relief, whereas you had not seen or examined the said William Jones, which certificate was untrue, misleading, or improper. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

(2) Francis Pulteney Flood, of Frondeg, Merthyr Tydfil, M.R.C.S. Eng., L.R.C.P. Edin., L.S.A. Lond., who had been summoned to appear before the Council on the following charge :—

"That, being a registered medical practitioner, you signed and issued a certificate or statement dated May 14th, 1924, stating that one William Jones was unable to work, whereas you had not seen or examined the said William Jones, which certificate was untrue, misleading, or improper. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

(3) Vivian Thomas Pearce Webster, of Tygwyn, Merthyr Tydfil, M.R.C.S. Eng., L.R.C.P. Lond., who had been summoned to appear before the Council on the following charge :—

"That, being a registered medical practitioner, you signed and issued five certificates or statements dated April 9th and 12th, May 21st and 27th, and June 11th, 1924, stating, as regards the first three, that one William Jones had been idle for three weeks and, as regards the last two, that he was suffering from a chronic ulcer of the leg and was unable to work regularly, whereas you had not seen or examined the said William Jones except, possibly, on one occasion, which certificates or statements were untrue, misleading, or improper. And that in relation to the facts so alleged you have been guilty of infamous conduct in a professional respect."

Mr. Le Brasseur appeared for Mr. Brennan privately, and for Mr. Flood and Mr. Webster, acting on behalf of the London and Counties Medical Protection Societies, and raised the point that there was no evidence against Mr. Flood. The President agreed and Mr. Flood was discharged from the case. Mr. Harper, the Council's solicitor, explained that the two charges arose out of the prosecution of a Mrs. Jones, of Merthyr Tydfil, for obtaining about £20 in poor relief on the grounds that her husband was ill and unable to work, whereas during most of the period he was earning £2 a week or more. Mr. Harper read a newspaper account of the proceedings before the stipendiary magistrate, from which it appeared that Mrs. Jones had been enabled to get her poor relief through the certificates forming the subjects of the charge. The magistrate severely criticised the laxity shown by the doctors in granting these certificates and suggested that they ought to repay the £20 to the guardians. He, the magistrate, was in a difficult position, because he could not fine Mrs. Jones or send her to prison, her husband's earnings were not sufficient to keep her and her eight children, and fine or imprisonment would make the position of the children worse. Mr. Webster stated that he attended the Jones family gratuitously. He was not the Poor-law doctor and Jones was not on his panel. Mrs. Jones called him in when he was visiting near her house to look at her husband's ankle, which was ulcerated. He considered that Jones was unfit to work and he gave the certificates out of kindness to help Mrs. Jones to get the relief to which she appeared to be entitled. He had no idea that Jones was going to work during the period covered by the certificates and realised now that what he had certified was untrue. Mr. Brennan stated that he was the Poor-law officer for the district. When Mrs. Jones called to see him with a note from the relieving officer and Mr. Webster's certificate he was very busy and could not have visited Jones that day. He therefore gave a certificate without seeing Jones, relying on the certificate of Mr. Webster in order to enable Mrs. Jones to get her relief promptly. The Jones family lived about three miles from his house and he had seen Jones about 18 months before when vaccinating the baby. He had been asked to look at the ankle.

The Council deliberated on the case in camera. The President announced its decison. The Council found the facts proved against Mr. Brennan and that he had been guilty of great laxity deserving of severe censure. The Council hoped that these proceedings would act as a warning and had decided to postpone judgment for six months, at the end of which time the usual testimony as to conduct, especially as to the granting of certificates, would have to be produced. The Council also found the facts proved against Mr. Webster and that he, too, had acted laxly. In his case, too, judgment would be postponed for six months, at the end of which time testimonials would have to be produced as to conduct.

FRIDAY, NOV. 28TH.

Erasures from the Dental Register.

There were four erasures from the Dental Register for various offences and in none was any appearance put in by the incriminated person.

The Case of David Williamson Anderson.

The President announced that this name had been removed from the Register.

Reports Submitted.

Reports from the following Committees were received: Public Health Committee, Pharmacopœia Committee, Education Committee, Examination Committee, and Dental Examination and Education Committee, as well as one from the Finance Committee.

Broadcasting.

The Council considered in camera the position of registered medical practitioners delivering public addresses for purposes of broadcasting. The matter was brought before them at the previous session, but no public announcement was made.

The Council rose on Friday afternoon.

THE DIRECT REPRESENTATIVES TO THE COUNCIL.

At the meeting of the Branch Council for England, held on Nov. 25th, Sir Donald MacAlister, the Chairman, announced that the following was the result of the voting at the election of Direct Representatives for England to be members of the General Medical Council :—

HENRY BRITTEN BRACKENBURY, M.R.C.S.	11,486
ROBERT ALFRED BOLAM, O.B.E., M.D.	10,087
Sir THOMAS JENNER VERRALL, M.R.C.S.	9620
JAMES ALEXANDER MACDONALD, M.D.	9143
Frederic Hibbert Westmacott, C.B.E., F.R.C.S.	3310
Henry Jasper Cardale, M.B.	2953
Robert Fielding-Ould, M.D.	2833
Gordon Reginald Ward, M.R.C.S.	2685
Harry François Devis, M.R.C.S.	2580
Edward Andrew Gregg, L.R.C.P. & S.	2125
John Brown, M.D.	1089

The first four will consequently be Direct Representatives for five years from Jan. 1st, 1925.

SIR MALCOLM MORRIS MEMORIAL FUND.—The hon. secretary of the committee announces that Sir John Broadbent and Dr. Ronald C. Macfie have sent donations to this Fund. The total subscribed to date is £479 6*s.* 2*d.*, and the committee earnestly hope that this sum will be made up to £500 at an early date as it has been decided to close the appeal at the end of December. Further subscriptions to that end will be very gratefully acknowledged if forwarded to the hon. treasurers, "Sir Malcolm Morris Memorial Fund," at 12, Stratford-place, London, W. 1.

Correspondence.

"Audi alteram partem."

GENERAL MEDICAL COUNCIL ELECTION.

To the Editor of THE LANCET.

SIR,—Will you allow us to express our united thanks to the registered medical practitioners—electors in England and Wales—who have given us so marked a proof of their confidence in the election just concluded? We offer our assurance of continued endeavour as their Direct Representatives on the General Council to look after their interests during the period of office which begins next year.

We are, Sir, yours faithfully,

R. A. BOLAM.
H. B. BRACKENBURY.
J. A. MACDONALD.
T. JENNER VERRALL.

Dec. 1st, 1924.

THE INFLUENCE OF THE VAGUS CENTRE IN CHLOROFORM NARCOSIS.

To the Editor of THE LANCET.

SIR,—The action of chloroform on the vagus centre and on the heart has been studied by many observers, but the interpretation of its effect is in some respects still doubtful. In the course of experiments on some 150 dogs in recent years, I have remarked certain symptoms which are not satisfactorily explained by the present views on the subject. In some animals (used for bleeding purposes only) chloroform constituted the sole anæsthetic given, and those referred to in this note belong exclusively to that category. The process of bleeding the first dog for heart-lung work is usually a hurried one, owing to the exigencies of the main operation. The chloroform at first causes inhibition of respiration, and this is followed by deep inspirations with which it is all too easy to give an overdose. In such a case, when the respiration and heart beats stop, the usual procedure is to make an opening in the abdominal wall, insert the finger, and massage the ventricle through the intact diaphragm, using the other hand as a *point d'appui*, and at the same time making the hand serve to effect artificial respiration, with the tongue pulled out, &c. Sometimes it is necessary to attach the respiratory pump to the trachea. Occasionally the respiration returns without restoration of the heart beat, but, this again failing, the animal may die. Respirations of this sort are evoked reflexly by the somatic and vagus nerves, the lung being pressed as well as the thoracic walls and the centre recovering some of its reflex excitability.

I have elsewhere[1] drawn attention to the necessity of distinguishing between reflex excitability and tone when testing the effects of hæmorrhage on bulbar centres, McWilliam having made a similar distinction when testing the effects of chloroform.[2] There are differences in the resistance and recuperative power of the bulbar centres, as has been shown by the writer,[1] by Bayliss,[3] and others, and the respiratory centre shows variations like the vaso-motor and the cardio-inhibitor. The breathing referred to above as occurring during massage is rhythmical, not of the gasping type seen as the centre is failing with anæmia or asphyxia. The stoppage of the heart occurs early in the administration, and is not due to toxic effect on the muscle of the walls. Its causation will be discussed in a moment. McWilliam, working on cats, found that stimulation of afferent nerves may cause temporary standstill of the heart under chloroform, but it is a reflex which he found very difficult to elicit. He also attributes stoppage to the effect of asphyxial blood, but beyond these two aspects of arrested beat he deals simply with variations of rate short of cessation. He goes so far as to say that the vagus centre is not necessarily paralysed in deep chloroform narcosis, in which its tone may be active. Dogiel[4] says chloroform first stimulates the vagus and then paralyses it. Kappeler[4] noted that the heart beat faster on cutting the vagi in fairly deep narcosis. Pharmacologists generally admit a transitory excitation of the vagus by the drug, and this is interpreted in a recent work on the subject[5] as due to a hyper-excitable state of the medulla "when freed from the restraining influence of the higher centres." The greatly increased excitability in response to extraneous stimuli is here looked upon as the cause of slowing of the heart. There is no suggestion of a direct stimulation of the cardio-inhibitor centre by which its tone is increased, but such direct action, it seems to me, will best explain the facts.

In some four or five animals the conditions, accidentally occurring or purposely produced, were as follows: The heart in complete standstill was massaged without effect for periods of half to one minute when an assistant was directed to cut the vagi, previously exposed or after a short delay for dissection. Section of one nerve caused either the occurrence of a few spontaneous beats or beats in response to pressure, but the section of the second trunk instantly set up a rapid and forcible rhythm. In other instances where the drug was pushed to produce like effects, cutting of the nerves was followed either by a few beats or by no change, and it was only after the use of the respiratory pump and squeezing the heart through an opening in the diaphragm that rhythmic beats were restored, very slowly and irregularly. In such cases as these the musculature was obviously affected by the drug, and even then some vagus tone was evident. This excessive tone of the centre not only holds up rhythmic activity, but prevents response to mechanical stimulation. It is remarkable that the condition may last long enough to cause ultimate failure of the heart at a time when the respiratory centre seems capable of responding to a due supply of blood and to reflex stimulation.

The chief indication for treatment is to cut off the tonic impulses from the centre. Injection of atropine with an arrested circulation must be useless. In the work already referred to[1] it has been shown how to block conduction in the exposed vagus nerve without injury to its functions—namely, by the passage of a constant current through it of E.M.F. about one volt. Function is quickly and fully restored on breaking the circuit, whereas the method of freezing the nerve for this purpose leaves conductivity depressed for a long time afterwards or even abolished in some cases. I have not been able to test the possibilities of this method by application through the unbroken skin.

I am, Sir, yours faithfully,

D. T. BARRY, M.D., D.Sc., F.R.C.S.

Cork, Nov. 29th, 1924.

[1] Barry: Brit. Jour. Exp. Path., 1923, iv., 92.
[2] McWilliam: Jour. Physiol., 1900, xxv., 233.
[3] Bayliss: Intravenous Injection in Wound Shock. London: Longmans. 1918.
[4] Dogiel: Quoted by McWilliam, loc. cit.
[5] Cow: Pharmacology, p. 51. London: Churchill. 1920.

LABORATORY CHANGES AT A HOSPITAL.

To the Editor of THE LANCET.

SIR,—The attention of the Medical Committee at the Hospital for Epilepsy and Paralysis has been drawn to the letter in your issue of Nov. 22nd signed by Drs. J. G. Greenfield, D. Nabarro, and A. Piney. They do not consider it necessary to defend the principle of a hospital laboratory undertaking clinico-pathological work for "*medical practitioners for the benefit of their patients who are not in a position to pay the usual charges*," which the circular complained of states. With regard to the staff of the laboratory, in the same issue of THE LANCET, p. 1102, will be found a paragraph explaining shortly the scheme and personnel of the laboratory which has recently been opened.

We are at present fortunate in the fact that our honorary pathologist is able to spend most of every

day at the hospital. His chief assistant is an M.Sc. Lond., an honours graduate, who for 15 months studied at the Central Pathological Laboratory of the London County Council under Sir Frederick Mott, and later under Dr. Golla, and is undoubtedly a highly qualified biochemist, with special bacteriological training in this laboratory, which draws its material from about 25,000 beds.

The Medical Committee are highly satisfied with the way in which the laboratory is working, both for the hospital and for those private practitioners who have already made use of its facilities.

I am, Sir, yours faithfully,

H. W. BURLEIGH,
Secretary and General Superintendent,
Hospital for Epilepsy and Paralysis,
Nov. 26th, 1924. Maida Vale, W.

PS.—Since the Medical Committee drafted the above letter, which was too late for insertion in your issue of last week, another letter signed by Dr. J. A. Murray has appeared on the same subject. This adds nothing to what was said before, as Dr. Murray also has not ascertained the facts from the hospital.

Nov. 29th, 1924. H. W. B.

THE EFFECT OF SPLENECTOMY ON THE PRODUCTION OF EXPERIMENTAL PURPURA.

To the Editor of THE LANCET.

SIR,—The authority with which Dr. S. P. Bedson writes on the subject of blood platelets is fully recognised, and his article on the above subject in THE LANCET (Nov. 29th, p. 1117) is an interesting and valuable addition to the reports of his experimental work. When, however, he extends his conclusions to the clinical field and writes that "(5) splenectomy cannot be relied on to give any but temporary relief in the treatment of purpura hæmorrhagica," he goes too far.

In the first place, experiments dealing with the artificial production of purpura in animals cannot be accepted as settling the question of the treatment of acquired purpura hæmorrhagica in human beings. Secondly, splenectomy has afforded far more than temporary relief as a treatment for purpura hæmorrhagica. Kaznelson's patient, the first case operated on, had had no recurrence of the disease five years later. Other cases, recorded in America, have remained free from any symptoms of the disease (purpura hæmorrhagica) up to the date of publication—namely, from 6 to 12 months after the operation. American writers hold strongly that splenectomy is a really curative treatment in the thrombocytopenic type of purpura hæmorrhagica.

I am, Sir, yours faithfully,

London, Dec. 1st, 1924. G. A. SUTHERLAND.

THE ALLEGED STERILITY OF PRESENT-DAY BACTERIOLOGY.

To the Editor of THE LANCET.

SIR,—It cannot be a surprise to many to find that the time has arrived when orthodoxy in bacteriology must perforce defend itself against the charge of stagnation. Dr. Ledingham's letter in your issue of Nov. 22nd (p. 1095) is probably the first of many such apologias. His easy-going disposal of the great heterodoxy of "bacterial cycles" as the offspring of an exuberant imagination and faulty technique is characteristic of the exponents of what many believe to be a dying era. Many instances could be cited of the reluctance of the community of monomorphic bacteriology to grapple with realities. Take, for example, influenza. Pfeiffer described a bacillus. Donaldson, from every case examined, obtained an extremely pleomorphic organism; it grew as bacilli and as cocci, and Donaldson suggested there might be a filtrable phase. Later Fry described yeast-like bodies which were capable of giving rise to bacilli. Wade and Manalang then discovered that under certain conditions Pfeiffer's bacillus could grow into large fungal forms, and declared the bacillus to be merely "a simple form of an organism capable of complex development." Reed and Orr confirmed these findings and showed that a simple alteration in the H-ion concentration of the medium was sufficient in all cases to induce the minute bacillus to grow into large hyphal and yeast-like forms. Olitsky and Gates added to the confusion by describing a filtrable form, but on occasions this grew as a comparatively large body. Finally Beaumont obtained a hyphomycete which grew in the following alternative phases: large spores, hyphæ, cocci, and bacilli, and suggested that influenza is really a mycosis, and that the many alternative phases in which the causal fungus could exist might "afford a means of unifying the seemingly discordant results that have been obtained by other workers." In view of all the facts is this unlikely? Monomorphic bacteriology vetoes it because bacteria are monomorphic! Henri obtained yeast, coccal and branching forms from *B. anthracis*. Monomorphic bacteriology says these are merely contaminations! Klebs and Malassez and Vignal many years ago described an amorphous and granular phase of the tubercle bacillus. During 40 years these observations were out of keeping with the dictates of monomorphism and they were submerged. Recently Valtis, Vanucci, and others have described a filtrable phase of the tubercle bacillus. Nothing but faulty technique! Löhnis, in a massive piece of work, has shown that many bacteria can grow alternatively as bacilli, cocci, yeasts, &c., and he has claimed that the secret of bacterial morphology is the bacterial plasm, from which, just as from the germ-plasm of higher organisms, a variety of differentiated elements, each capable of true-to-type propagation, can be obtained. They can grow as separate and distinct entities in separate test-tubes just as, from the same animal, the epithelial cells of the kidney can grow in one tube and the connective-tissue cells in another.

Is all this, and a hundred and one similar observations by other careful workers, merely a tissue of self-deceptions originating in an exuberant imagination and a faulty technique? Is it not rather one of those great facts that usher in a new era?

I am, Sir, yours faithfully,

Edinburgh, Nov. 27th, 1924. JAMES YOUNG.

THE CLINICAL SIGNIFICANCE OF CONSTIPATION.

To the Editor of THE LANCET.

SIR,—When we treat a patient for constipation, our aim in doing so is to save him from absorbing intestinal toxins, the condition being one that may be dependent upon a person's habits of life or upon individual idiosyncrasy. Many people take only two meals a day, and will defæcate less often than those whose meals number three or four. Dr. A. Hurst, in Constipation and its Allied Disorders, gives 40 hours as the limit, and calls a condition in which the action of the bowels is deferred beyond this period constipation.

It is important to note that, if the evils of constipation are admitted, it by no means follows conversely that easy and free habits in this respect necessarily denote health. The most remarkable case of cancer of the colon that I ever remember occurred in a man who had never in his life suffered from constipation; his usual habit being two easy actions daily. Whilst apparently in perfect health he was suddenly seized with complete obstruction, a laparotomy revealing a growth at the sigmoid flexure of the colon. The vast majority of those who suffer from intestinal putrefaction and its consequences, so far from being constipated, are accustomed to two or three soft, badly coloured, slightly offensive motions daily; and in dealing with the functions of the lower bowel, the only safe method to employ is to subject the fæces to chemical and bacteriological examination. A very

frequent type of stool is alkaline in reaction, and contains Gram-positive organisms far in excess of the normal. This is, I think, invariably an indication for the use in treatment of soured milk—that is to say, milk, the sugar of which has undergone lactic fermentation. Clinically this condition may be associated either with constipation or the reverse. (Incidentally such cases do very well with a tablespoonful of raw oatmeal taken in the morning, owing to the fact that the starch granules are not broken up until they reach the lower bowel, where they furnish a pabulum upon which lactic acid organisms flourish abundantly.)

As the result of several years' observation in general practice, I think that the man who habitually has one well formed, possibly even rather hard motion daily, of good colour, is far more likely to be healthy—that is to say, to resist the ravages of chronic infections—than he who has two or three soft motions, and who probably prides himself on the fact. The latter is in all probability suffering to some extent from either carbohydrate or protein putrefaction, a condition which very slowly and insidiously will produce those changes associated in the lay press and in many minds with constipation. As the result of propaganda, and the diffusion of medical knowledge, there has already been evolved the type of person who tells one with pride of his two or three daily sacrifices to cloacina, and who expects to be cured quickly and kept alive to a green old age in consequence.

The evil-producing qualities of a stool depend far more upon a departure from normal of its bacterial content than upon its consistency or frequency, and in treating this particular function of the human body the help of the pathologist should more frequently be sought.—I am, Sir, yours faithfully,

Reading, Nov. 27th, 1924. E. G. MARCH.

PATHOLOGY OF NEPHRITIS.

To the Editor of THE LANCET.

SIR,—In the review appearing in your issue of Nov. 22nd of an article of mine in the October issue of the *Quarterly Journal of Medicine* I am credited with the statement that all my cases of nephritis "might, had not death intervened, have conformed to the chronic interstitial type." May I be permitted to point out that this is exactly what I did not state? Actually my communication took the form of an attempt to demonstrate the existence of two types of "chronic parenchymatous nephritis," one of which, barring accidents, tended to recovery, while the other proceeded inevitably to the "chronic interstitial" stage. I am, Sir, yours faithfully,

Wolverhampton, Nov. 29th, 1924. S. C. DYKE.

"A DISCLAIMER."

To the Editor of THE LANCET.

SIR,—I have seen the letter from Dr. Knyvett Gordon, of the Virol Laboratories, under this heading in your issue of Nov. 22nd, and I have to say only that I could have wished that, for his own sake, he had not contented himself with quoting a single casual sentence from my letter, but had added that I began it with a frank apology and expression of regret if I had inadvertently omitted any usual courtesy in quoting him without previously asking his consent. The quotation itself clearly shows more than once that he favours vaccine-therapy, as opposed to chemo-therapy: and therefore I cannot believe that any ordinary reader of the pamphlet would gather an impression that Dr. Gordon could be by it associated with my own views on the employment of intestinal bactericides. My one and only object in quoting him was to show, as I said, that his expressed opinion "affords striking evidence of the influence of systemic infection in pyorrhœa."

In the same brief pamphlet I had occasion to quote Mr. Peyton Beale, Dr. Alexander Bryce, and Mr. Garnett Ellis; and I still cannot help feeling that I did pay, to at least some little extent, a real compliment to Dr. Gordon by placing him with these authorities. But my one complaint is that a solitary sentence should be torn out of my reply to his protest, and the ready expression of regret, and a promise to consult him in any future case, be omitted. Such a letter conveys a quite unfair impression. Of course, there are various standards of fairness in public controversy: Dr. Gordon has chosen his, and I must leave your readers to decide whether he has chosen well.

I am, Sir, yours faithfully,

J. T. AINSLIE WALKER, F.I.C., F.C.S.

Ludgate Hill, London, E.C., Nov. 25th, 1924.

To the Editor of THE LANCET.

SIR,—I am obliged to you for letting me see Mr. Ainslie Walker's reply to my disclaimer. There was no point in reproducing the whole of his letter, so I quoted the sentence that mattered. It is true that Mr. Ainslie Walker stated that if he had inadvertently omitted any courtesy customary between scientific investigators he regretted and apologised, but he went on to justify his quotation from my article without my consent and even described that procedure as a compliment. I objected because the pamphlet was not a scientific publication but a commercial advertisement. The extract appeared in a pamphlet advocating dimol, and has, in fact, actually led to my being credited with thinking favourably of that drug when I happen not to do so.

The fact that other writers were so treated does not seem to me relevant.

I am, Sir, yours faithfully,

A. KNYVETT GORDON, M.B., B.C., B.A. Camb.

Bedford-square, W.C., Nov. 29th, 1924.

INSUFFLATION OF THE FALLOPIAN TUBES.

To the Editor of THE LANCET.

SIR,—My friend, Mr. Victor Bonney, is in error in supposing that the simple method—described in THE LANCET, Nov. 22nd—which he has been using, apparently for a few months only, is new. I have employed this procedure since 1921; and I think I am right in saying that Dickinson and others in the United States have also long practised insufflation of the tubes in the same way.

The use of air has one disadvantage—namely, there is more and longer-continued pain subsequently than after insufflation with CO_2. I agree with Mr. Bonney that there are unsuspected lesions capable of producing sterility that can only be discovered by insufflation; but as I hope before long to publish in conjunction with some of my colleagues our experiences I shall not dwell on them here.

I am, Sir, yours faithfully,

Liverpool, Nov. 23rd, 1924. W. BLAIR BELL.

PITUITARY WHOLE GLAND IN CONSTIPATION.

To the Editor of THE LANCET.

SIR,—Although experimental physiologists tell us that whole pituitary gland when administered to animals in the laboratory produces no effects, its clinical administration to human beings seems to be attended in many cases with well-marked results. In THE LANCET of Oct. 18th Dr. Bernard Myers reported its successful clinical use in a case of chronic constipation, and I now record another case of chronic constipation similarly treated.

A. B., a healthy European male adult of about 30 years, had suffered for some years with chronic constipation. He led an active, vigorous life, and had tried most of the various known purgatives, including liquid extract of cascara sagrada, but had failed to secure permanent relief. On being consulted I surmised that the case might then be partly due to muscular atony of the bowel induced by chronic overloading (intestinal stasis). Being aware of the physiological action on the bowel of subcutaneous injections

of extract of the posterior lobe of the pituitary gland, I determined to try the effect of the administration of whole gland substance by mouth—daily subcutaneous injections of pituitrin in such a case being out of the question. One tabloid of whole pituitary gland, gr. 2, was therefore prescribed t.i.d., and within two months the patient reported his condition cured.

This took place in the year 1913, and lapse of time has abundantly proved the cure to be permanent. Since then I have prescribed whole pituitary gland in several other such cases, and also in many cases of post-operative atony of the bowel with constipation, similarly successful results being achieved in all. In the nervous and physical exhaustion following operations I have also found whole pituitary gland of the greatest value. In India it is particularly useful in the mental and physical exhaustion produced by continuous residence in the plains during the hot season of the year.

I am, Sir, yours faithfully,

J. W. TOMB., M.D., D.P.H.

Asansol, Bengal, India, Nov. 12th, 1924.

INTRA-OCULAR TENSION IN MYOPIA.

To the Editor of THE LANCET.

SIR,—The conditions mentioned by Dr. J. Lawson Dick in your issue of Nov. 29th (p. 1151) are undoubtedly important contributory factors in the causation of myopia, but increased intra-ocular tension is the direct exciting cause, just as the tubercle bacillus is the direct exciting cause of tuberculosis. In the conditions mentioned by Dr. Dick it is particularly important to avoid all increase of intra-ocular tension which will obviously act more effectively with a weak eye than with a strong one. After the publication of my Arris and Gale lecture in THE LANCET I received numerous letters from ophthalmic surgeons in all parts of the world agreeing with my conclusions. What other explanation could be given of the following case? A man staying at a farm had to help to hold a bull which had become wild, and he had to exert his strength to the utmost; he ruptured himself, became myopic in a low degree in one eye and blind in the other through detachment of the retina, in the one afternoon; he stated that he had previously very good sight.

I am, Sir, yours faithfully,

London, Dec. 1st, 1924. F. W. EDRIDGE-GREEN.

Obituary.

ROBERT JAMES LEE, M.D. CAMB.

Dr. Robert James Lee, at one time physician to the Hospital for Children, Great Ormond-street, died recently at the age of 83, at West Drayton. The son of Robert Lee, F.R.S., the famous obstetrician whose differences with the Royal Society caused much stir in their time, he received his early education at King's College School, London, and Brighton College, and went up to Gonville and Caius College, Cambridge, as a Tancred Student. He studied medicine at St. George's Hospital, St. Thomas's Hospital, and in Paris, becoming an M.D. Camb. in 1869 and a Fellow of the Royal College of Physicians of London in 1874, in which year he was appointed Goulstonian lecturer. His first appointment was as lecturer in pathology and forensic medicine at Westminster Hospital, and later he became joint lecturer in obstetric medicine and assistant obstetric physician at St. George's Hospital, taking for his subject in the Goulstonian lectures, Puerperal Fever. Dr. Lee was an early contributor to the columns of THE LANCET, following the precedent of his father, and many of the lectures he delivered to his students appeared in our pages. In 1873 he published a work on "Exercise and Training, their Effects upon Health," in which he distinguished two kinds of fatigue—local or muscular fatigue and general fatigue or loss of wind—and in which he gave some valuable hygienic rules to be observed while training. In 1876 appeared the "History, Diagnosis, and Treatment of Whooping-cough," and three years later he compiled a small text-book for students on pathological anatomy. In 1889 he published a series of lectures on the "Transmission of Syphilis from Parents to Offspring," which followed the publication of his lectures at the Great Ormond-street Sick Children's Hospital during the years 1884–5–6, and several of his papers on scientific and medical subjects are recorded in the Proceedings of the Royal Society and elsewhere.

Dr. Lee was an enthusiastic athlete, both on the running-track and as an oarsman. He never fulfilled his early promise, either as a general physician or a specialist, largely because he was distinctly difficult. He resigned his Fellowship of the Royal College of Physicians of London, and lived for many years in retirement.

Medical News.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful:—

THIRD (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES.

Honours.—Frank B. Byrom (*a*), London Hosp.; Lawrence Dulake (*b*, *d*, University Medal), King's Coll. Hosp.; John Angell James (*a*), University of Bristol; Richard J. Toleman (*a*), London Hosp.; and Mary M. Turnbull (*a*), King's Coll. Hosp.

(*a*) Distinguished in Medicine. (*b*) Distinguished in Pathology. (*d*) Distinguished in Surgery.

Pass.—Katharine M. Andrew, King's Coll. Hosp.; Ruth M. Arkwright, St. Mary's Hosp.; Nehemiah Asherson, Univ. Coll. Hosp.; Alfred A. Battson, St. Thomas's Hosp.; John Bevan-Jones and Phyllis E. Bond, Univ. Coll. Hosp.; Reginald T. Brain, London Hosp.; Violet W. Brown, St. Mary's Hosp.; Frank A. Bryning, King's Coll. Hosp.; Arthur B. Cooper and Edward R. Cullinan, St. Bart.'s Hosp.; William A. Date, St. Mary's Hosp.; David J. Davies, Middlesex Hosp.; Francis Davies, Univ. Coll. Hosp.; Iforwyn G. Davies, St. Bart.'s Hosp.; Arnold F. Doyle, St. Thomas's Hosp.; Ernest F. Duck, Doris L. Durie, and David G. M. Edwards, Univ. Coll. Hosp.; John Elgood, St. Bart.'s Hosp.; Phyllis V. L. Epps, London Sch. of Med. for Women; Stewart Farquharson, St. Thomas's Hosp.; Valentine F. Farr, St. Bart.'s Hosp.; Margery Freeborough, St. Mary's Hosp.; Horace P. Goldsmith and John A. E. M. Hadley, Univ. Coll. Hosp.; Ronald Hare, St. Mary's Hosp.; John K. Hasler, Middlesex Hosp.; Sybil M. Hawkes, London Sch. of Med. for Women; Kenneth W. Heritage, London Hosp.; Elfrida L. G. Hill, Univ. Coll. Hosp.; Frances A. Hogben, University of Manchester; Barbara M. Hope, King's Coll. Hosp.; Margaret Hossell, London Sch. of Med. for Women; Audrey M. Hughes, Charing Cross Hosp.; Cyrus Ive, Guy's Hosp.; Francis J. Jauch, London and Middlesex Hosps.; Arthur E. Jenkins, St. Thomas's Hosp.; Eva M. Johnson and Alan T. Jones, Univ. Coll. Hosp.; David J. Jones, Westminster Hosp.; John W. Joule, St. Bart.'s Hosp.; Nancy R. Lewis, London Sch. of Med. for Women and St. Mary's Hosp.; Kate Madders, Harold J. Malkin, and Doris I. Mart, Univ. Coll. Hosp.; Violet E. M. Mizen, London Sch. of Med. for Women; Paul McG. Moffatt, Guy's Hosp.; Herbert V. Morlock, St. Bart.'s Hosp.; Arthur D. Morris and Herman Mould, Univ. Coll. Hosp.; Alfred L. te W. Naudé, St. Thomas's Hosp.; Frederick G. Nicholas, Middlesex Hosp.; Doris E. O'Doherty, London Sch. of Med. for Women; Patrick H. O'Donovan, London Hosp.; Cyril M. Pearce, St. Bart.'s Hosp.; John P. Peel, University of Leeds; Abraham T. W. Powell, Guy's Hosp.; Cyril S. C. Prance, St. Bart.'s Hosp.; Violet A. Quilley, London Sch. of Med. for Women; William A. Robb, St. Bart.'s Hosp.; Nina L. D. Robertson, King's Coll. Hosp.; Morris Rockfelt, Winifred M. Sampson, and Margaret B. Savory, Univ. Coll. Hosp.; George D. Shaw, Guy's Hosp.; Norman W. Snell, King's Coll. Hosp.; Dorothy M. Stewart, London Sch. of Med. for Women and St. Mary's Hosp.; Grace M. L. Summerhayes, London Sch. of Med. for Women; Dick B. Sutton, King's Coll. Hosp.; Mary A. St. Clair Swann, London Sch. of Med. for Women; Harry C. C. Taylor, Guy's Hosp.; Portia K. Taylor and Robert C. Taylor, Univ. Coll. Hosp.; Beatrice Teverson, St. Mary's Hosp.; Douglas J. Valentine, London Hosp.; Arthur H. C. Visick, St. Bart.'s Hosp.; and Henry G. Wyatt, London Hosp.

A course of three lectures on The Anatomy and Physiology of the Sympathetic Innervation of the Striated Muscle will be given at University College, by Prof. John Irvine Hunter, of the University of Sydney, at 5 P.M., on Dec. 8th, 10th, and 12th. At the first lecture the chair will be taken by Prof. G. Elliot Smith F.R.S. Admission to these lectures is free.

UNIVERSITY OF EDINBURGH.—The following candidates were successful in the recent Clinical Examination for the degree of M.D. :—

Hope P. Anderson, John Bennet, Jessie R. Brash, James D. S. Cameron, Angus H. Campbell, Sisir C. Chatterjee, John A. Douglas, Alexander D. Edington, William R. D. Fairbairn, Helen M. Hendrie, Frederick T. Ingram, Alan J. Kilgour, Ella MacKenzie, Ronald D. Mackenzie, William F. Mair, David Pottinger, Hilda D. Scott, Doreen Stranger, Thomas R. R. Todd, Edward R. C. Walker, William N. Boog Watson, J. H. Harley Williams, Alexander B. Williamson, and William M. Wilson.

OLD EPSOMIAN CLUB.—The annual dinner of the club will be held at the Trocadero Restaurant, Piccadilly Circus, on Thursday, Dec. 11th, at 7.15 P.M. Mr. George E. Waugh will be in the chair. The annual meeting will precede the dinner at the same place at 6.30 P.M. Members of the club intending to be present at the dinner are asked to notify Mr. R. M. Handfield-Jones, 53, Hamilton-terrace, St. John's Wood, N.W. 8, as soon as possible, mentioning the names of those near whom they would like to sit. The price of the dinner is 8*s.* 6*d.* (exclusive of wine), and will be collected at the table.

ROYAL SANITARY INSTITUTE: HENRY SAXON SNELL PRIZE.—The subject given for essays in competition for this prize in 1924 was Improvements in the Sanitary Conditions of Underground Dwellings and Small Underground Workshops. Eleven essays were received, including one from Canada, and they have been brought under the consideration of the Council. Acting on the advice of the adjudicators, the Council have awarded the prize of 50 guineas and the silver medal of the Institute to Mr. E. Thomas Swinson, M.R.San.I. (Feltham). Two of the other essays showed considerable merit, and the Council have decided to recognise this by making a supplementary award of a bronze medal of the Institute to each of the writers, Mr. Edward E. Barks, A.R.I.B.A. (London) and Mr. F. R. Jelley (Sutton).

MANCHESTER HOSPITAL SUNDAY FUND.—At the annual meeting of the Manchester and Salford Medical Charities the report presented showed that the income of the Sunday Fund was £14,029, the interest from investments £1275, and the amount distributed to charities £13,649. The Shrove Tuesday collections of the University students showed a persistent and satisfactory increase. In 1921 the students collected £656; in 1922, £1036; in 1923, £2017; and in 1924, £2850. Outside areas for the most part only contributed £1 out of every £2 which Manchester and Salford hospitals spent in treating outside area patients. In 1923 the number of cases treated in institutions of the Manchester and Salford Medical Charities was 295,718, at a cost of £335,591, while the ordinary income fell about £14,000 short of that expenditure.

UNIVERSITY OF LIVERPOOL.—Some interesting statements were made at the annual November meeting of the Court of the University of Liverpool. The number of students and the expenditure of the University have doubled during the past ten years, and additional financial support is required and imperative if the work is not to be crippled. On an average the fees paid by the students covered only one-third of the cost. The budget for 1914 showed an expenditure of £80,000, whereas to-day it is £197,000, and there is a debt to the bank of £57,000. In 1914 the number of full-time students was about 900; to-day it was 1700, notwithstanding the fact that practically all the ex-Service students had departed. Vice-Chancellor Adami in his report called attention to some "live problems." At the present time, he said, there was not a sufficiency of posts in industry to employ even half the graduates in chemistry of the last two years, while many newly graduated women doctors throughout the country were seeking in vain for hospital appointments. The annual deficit in the working of the University is between £6000 and £7000.

DONATIONS AND BEQUESTS.—By the will of the late Mr. J. H. Morgan, F.R.C.S., the testator left among other bequests £1000 to Charing Cross Hospital; £250 to the Hospital for Sick Children, Great Ormond-street, W.C.; £200 to the British Medical Benevolent Fund; and £100 to Lord Mayor Treloar's Hospital at Alton.—Mr. Walter Jones, of Stourbridge, left £1000 each to the Corbett Hospital, Amblecote, Stourbridge, Dr. Barnardo's Homes, to certain trusts as to land recently presented to him at Stourbridge, and to the trustees of the British Healers' Association, Manchester.—Mr. David Islip, retired fish-curer, of Hull, left (subject to a life-interest) £1500 to Hull Royal Infirmary for the endowment of a bed in the Walker Ward in memory of his late wife; £500 each to the Hull Seamen's and General Orphan Asylum, Kingston-on-Hull, and to the Port of Hull Society's Sailors' Orphan Home; £250 to the Victoria Hospital for Sick Children, Kingston-on-Hull; £100 to the Hull and Sculcoates Dispensary; and £50 to the Hull Blind Institution. After other bequests, the ultimate residue of the property is left in equal shares to the Hull Royal Infirmary and the Hull Seamen's and General Orphan Asylum.—Coalville Urban Council have accepted a gift of £8000 from the Leicestershire Miners' Welfare Committee towards the provision of public baths in the town.—Miss Emily Sarah Soden Philpot, of Penge, left nearly £20,000 to charity. She bequeathed £500 each to the London, Guy's, Charing Cross, St. Bartholomew's, and Middlesex Hospitals; £500 each to the Metropolitan and City Police Orphanage; £250 each to the Hospital for Sick Children, Great Ormond-street, the South-Eastern Hospital for Children, Sydenham, the Beckenham and Norwood Cottage Hospitals, and the Convent for Sisters of Nazareth, Hammersmith; and £105 to Dr. Harding Philipps. After further legacies, she left all her other property equally between eight charitable institutions.—The Royal Northern Hospital has received from the executors of the late Miss Mary Neal, of Victoria-road, Southborough Common, Kent, a cheque for £1678 13*s.* 11*d.* This sum is to be divided equally between the Royal Northern Hospital, Holloway, and the Royal Chest Hospital, City-road.—Mr. Geoffrey Duveen, who has already munificently contributed to schemes for medical education in the University of London, has given £50,000 to University College for the construction of a new Ear, Nose, and Throat Hospital to perpetuate the memory of his late father. It will be remembered that last year Mr. Duveen gave £15,000 for the purpose of providing a suitable site adjoining University College Rockefeller buildings in Huntley-street, and £10,000 to the University of London for the establishment and endowment of a chair of Otology.

COLONIAL MEDICAL COUNCIL AT CAPE TOWN.—At the monthly meeting of the Colonial Medical Council, held at Cape Town on Tuesday, Nov. 4th, Dr. Darley Hartley presiding, the resolution passed at the last previous meeting recognising the medical degrees conferred by the University of Cape Town was unanimously confirmed. It was resolved to hold the examinations for midwifery certificates in the middle of December. It was stated that 48 candidates would sit, of whom 34 would be from the Cape. A communication was read from the executive of the South African Native College at Fort Hare asking to be favoured with a suitable curriculum for a proposed medical course for native students. The Chairman thought that, as the Council was only concerned with the registration of degrees and diplomas, it was outside of its province to give the desired advice. He thought that the reply should be given by the Universities, who were the qualifying bodies. It was resolved to reply that the question of a suitable curriculum could be more advantageously answered by the University to which the College is affiliated.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, Dec. 8th.

WAR: at 5 P.M.

Paper:

Major R. W. G. Hingston, M.C., I.M.S.: Some Observations on the Application of the Royal Air Force Physical Efficiency Test in the 1924 Mount Everest Expedition.

Tuesday, Dec. 9th.

THERAPEUTICS AND PHARMACOLOGY: at 4.30 P.M.

Paper:

Prof. W. E. Dixon and Dr. F. H. A. Marshall: The Influence of the Ovary on Parturition.

OBSTETRICS AND GYNÆCOLOGY.

Members of this Section are particularly invited to be present and to join in the Discussion.

PSYCHIATRY: at 8.30 P.M.

Paper:

Dr. David Orr: The Anatomical and Physiological Mechanism of Emotion.

Wednesday, Dec. 10th.

MEDICINE, OTOLOGY, NEUROLOGY, LARYNGOLOGY } at 5.10 P.M. (to be adjourned, if necessary, to 8 P.M.).

Joint Discussion on
The Causes, Early Recognition, and Treatment of Non-Tubercular Meningitis.

Openers:
Dr. Hugh Thursfield (Section of Medicine).
Sir William Milligan (Section of Otology).
Dr. Worster-Drought and Dr. J. G. Greenfield (Section of Neurology).
Mr. W. M. Mollison (Section of Laryngology).

Thursday, Dec. 11th.

TROPICAL DISEASES AND PARASITOLOGY: at 5.30 P.M.

Paper:
Mr. J. Ramsbottom: Edible and Poisonous Toadstools (illustrated by coloured lantern slides).
A cinematograph film illustrating the Biology of Bilharzia, kindly lent by Dr. W. Watkins-Pitchford, will be shown by kind permission of the South African Institute for Medical Research, Johannesburg.

Exhibits:
Dr. H. B. Day: (*a*) Charts showing the Effect of Antimony Tartrate on Bilharzia Ova; (*b*) Coloured drawing showing Effect of Antimony Tartrate on Bilharzic Urine.
Lieut.-Colonel H. Marrian Perry, R.A.M.C.: The Life-history of the Water Snail.

COMPARATIVE MEDICINE, THERAPEUTICS AND PHARMACOLOGY } Members of these Sections are cordially invited to attend this meeting.

NEUROLOGY: at 8 P.M.

Clinical Meeting at the West End Hospital for Nervous Diseases, Welbeck-street, W.

Notes of cases (as concise as possible and in a form suitable for publication) should be sent to the Junior Hon. Secretary (Dr. Feiling) not later than the first post on Monday, Dec. 8th.

Friday, Dec. 12th.

CLINICAL: at 5.30 P.M. (Cases at 5 P.M.)

Cases:
Mr. G. A. Rutherford: Two Cases of Purpura Hæmorrhagica, treated by Splenectomy, and one case awaiting treatment.
Sir Percy Bassett-Smith: Case of Pituitary Tumour.
Dr. Parsons-Smith: Two Cases of Cardiac Disease.
Other cases will be shown.

OPHTHALMOLOGY: at 5 P.M.

Clinical Meeting at the Royal Westminster Ophthalmic Hospital, King William-street, Strand.
A Discussion on the Cases shown will take place at 6 P.M.

ANÆSTHETICS: at 8.30 P.M.

Discussion on
Splanchnic Analgesia with Record of Cases.
Mr. O. Stanley Hillman will speak on Technique and the Surgical Aspect.
Mr. Raymond E. Apperly will deal with the Anæsthetic Aspect.

SURGERY:
Members of this Section are specially invited to attend this Discussion.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY, Dec. 8th.—8.30 P.M., Discussion on the Present Position of the Treatment of Diabetes by Insulin, to be introduced by Dr. George Graham, followed by Prof. MacLean and others.

HARVEIAN SOCIETY OF LONDON.

THURSDAY, Dec. 11th.—8.30 P.M. (at Paddington Town Hall, Harrow-road, Paddington Green). Dr. Charles Buttar: The Future Position of Consultants under the National Insurance Act. To be followed by a discussion.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, W.

THURSDAY, Dec. 11th.—8.15 P.M., Discussion on Some Clinical and Scientific Aspects of Drug Addiction in the Tropics, opened by Prof. Dixon, F.R.S., of Cambridge, and Sir Havelock Charles, followed by Sir William Collins and Dr. Arthur Powell. Preceded by a Demonstration at 7.45 P.M.

WEST KENT MEDICO-CHIRURGICAL SOCIETY, Miller General Hospital, Greenwich, S.E.

FRIDAY, Dec. 12th.—8.45 P.M., Mr. Bellingham G. Smith: The Importance of the Antenatal Clinic (Purvis Oration). There will be a conversazione and Mr. F. Davidson will give a demonstration of the Super-microscope with lantern slides.

BIOCHEMICAL SOCIETY (Biochemical Laboratory, Imperial College of Science and Technology, South Kensington).

MONDAY, Dec. 8th.—5 P.M., E. Watchorn: The Magnesium of Human Serum. M. E. Robinson and R. A. McCance: The Oxidation of Amino-acids by Fungus Tyrosinase. H. W. Buston, H. N. Mukherjee, and S. B. Schryver: The Isolation of a Hydrolysis Product of the Proteins, Hitherto Undescribed. H. Martin and S. B. Schryver: Some Transformations of Casein. Dorothy Griffiths and S. B. Schryver: The Separation of the Proteins of Egg-white in an Electrical Field.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.

MONDAY, Dec. 8th, to SATURDAY, Dec. 13th.—WEST LECTURE HALL, Royal Society of Medicine. Lecture arranged by the Fellowship of Medicine and open to all members of the profession. At 5.30 P.M. Wed., Dec. 10th, Mr. James Berry: Cancer of the Thyroid. —ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-road, S.E. Special Course in Medicine, Surgery, and Gynæcology. Lecture-Demonstrations in the Wards and Out-patient Departments. INFANTS HOSPITAL, Vincent-square, S.W. Special Course in Diseases of Infants, consisting of clinical demonstrations, "Round Table" consultations, lectures, &c.—HOSPITAL FOR DISEASES OF THE SKIN, Blackfriars-road. Course in Dermatology, consisting of instruction in Out-patient Department every afternoon at 2.30 P.M., and a Venereal Clinic Tuesdays and Fridays.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.

MONDAY.—12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Mr. Addison: Surgical Wards. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.

TUESDAY.—11 A.M., Dr. McDougal: Electrical Dept. 12 noon, Dr. Burrell: Chest Cases. 2.30 P.M., Mr. Tyrrell Gray: Surgical Wards.

WEDNESDAY.—12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Dr. Owen: Medical Out-patients. 2.30 P.M., Mr. Donald Armour: Surgical Wards.

THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 11 A.M., Mr. Simson: Gynæcological Wards. 2 P.M., Mr. MacDonald: Genito-Urinary Dept.

FRIDAY.—10.30 A.M., Dr. Pritchard: Medical Wards. 12 noon, Surgical Registrar: Surgical Pathology. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Dept.

SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Throat, Nose, and Ear Operations.

Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

TUESDAY, Dec. 9th.—4.30 P.M., Mr. C. H. Hayton: Quinsies, their Complications and Treatment.

FRIDAY.—4.30 P.M., Mr. W. Ibbotson: Nasal Sinusitis, its Importance, Diagnosis, and Treatment.

Daily: Medical and Surgical Clinics, Clinics in the various Special Departments, Surgical Operations, &c.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY, Dec. 11th.—4 P.M., Dr. Thursfield: Splenomegaly.

ROYAL DENTAL HOSPITAL OF LONDON POST-GRADUATE LECTURES.

WEDNESDAY, Dec. 10th.—5 P.M., Mr. H. Stobie: Diagnosis and Surgical Principles Underlying Treatment of Cysts and Other Common Tumours of the Jaws.

ST. JOHN'S HOSPITAL, 49, Leicester-square, W.C.

TUESDAY, Dec. 9th.—5 P.M., Dr. J. H. Sequeira: Tuberculosis Cutis.

THURSDAY.—5 P.M., Dr. S. E. Dore: Erythemato-squamous Eruptions.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE LECTURES.

TUESDAY, Dec. 9th.—4.15 P.M., Dr. F. Craven Moore: Some Aspects of *Bacillus coli* Infection.

FRIDAY.—Dr. D. E. Core: Early Mental Disease, its Differentiation and Prognosis.

UNIVERSITY OF SHEFFIELD POST-GRADUATE LECTURES. (At 3.30 P.M.)

TUESDAY, Dec. 9th.—(At the Royal Infirmary.) Mr. R. St. L. Brockman: The Complications of Gall-stones.

FRIDAY.—(At the Royal Hospital.) Mr. Garrick Wilson: Acute Osteomyelitis.

BRISTOL UNIVERSITY POST-GRADUATE DEMONSTRATIONS.

WEDNESDAY, Dec. 10th.—3.15 P.M. (at the Town Club, Swindon), Dr. A. T. Todd: Hepatic Insufficiency, Diagnosis, &c.

ST. ANDREWS INSTITUTE FOR CLINICAL RESEARCH.

TUESDAY, Dec. 9th.—4 P.M., Dr. Maclennan: Clinical Pathology of the Urine.

INSTITUTE OF HYGIENE, Devonshire-street, W.
WEDNESDAY, Dec. 10th.—3.30 P.M., Dr. A. Middleton Hewat: Infant Foods and Feeding.

ROYAL INSTITUTE OF PUBLIC HEALTH, Russell-sq., W.C. (Course of Lectures on the Health of the Commonwealth.)
WEDNESDAY, Dec. 10th.—4 P.M., Sir Robert Jones: The Problem of the Cripple Child.

THE PEOPLE'S LEAGUE OF HEALTH. Course of Lectures on the Mind and What We Ought to Know About It. (At the Medical Society of London, 11, Chandos-street, W.)
MONDAY, Dec. 8th.—6 P.M., Dr. Tredgold: Mental Deficiency.

Appointments.

HODSON, V. S., M.B. Oxf., M.R.C.P. Lond., has been appointed Physician to Out-patients at the City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.

MCILROY, A. LOUISE, M.D., D.Sc. Glasg., Examiner in Obstetrics in the University of London.

Manchester Royal Infirmary: SMITH, G. S., M.B., Ch.B. Manch., House Surgeon; ROBERTS, W. M., M.B., Ch.B. Manch., House Physician; HORTON, W. L., M.B., Ch.B., Clinical Assistant.

St. Mary's Hospitals, Manchester: ROBINSON, G. T., M.B., Ch.B. Manch., COWAN, J. MUIR, M.B., Ch.B. Manch., and WILDE, J. MARGARET, M.B., Ch.B. Manch., House Surgeons.

Vacancies.

For further information refer to the advertisement columns.

Belgrave Hospital for Children, Clapham-road, S.W.—Res. M.O. at rate of £100.

Birkenhead Borough Hospital.—Sen. H.S. £200.

Birmingham, Queen's Hospital.—Pathologist. £100.

Bristol Royal Infirmary.—Hon. Reg. to Ear, Nose, and Throat Dept.

Buxton, Derbyshire Devonshire Hospital.—Asst. H.P. at rate of £150.

Cambridge, Addenbrooke's Hospital.—Cas. O. and Res. Anæsthetist at rate of £130.

Charing Cross Hospital, W.C.—Res. M.O. £400.

Chelmsford Administrative County of Essex.—Two Asst. County M.O.H.'s. Each £600.

Derbyshire Royal Infirmary.—Hon. Asst. S. Also Ophthal. H.S. £200.

Doncaster Royal Infirmary.—H.P. £150.

Douglas, Isle of Man, Noble's Hospital.—Res. H.S. £175.

East London Hospital for Children and Dispensary for Women, Shadwell, E.—H.S. at rate of £125.

East Sussex County Mental Hospital, Hellingly, Sussex.—Pathologist. £400.

Exminster, Devon Mental Hospital.—Jun. A.M.O. £300.

Greenwich, Dreadnought Hospital.—H.P. and H.S. at rate of £150.

Hospital for Epilepsy and Paralysis, Maida Vale, W.—Hon. Ophth. S.

Infants Hospital, Vincent-square, Westminster.—Jun. Anæsthetist.

Ipswich, East Suffolk and Ipswich Hospital.—H.P. £100.

Johannesburg, South African Inst. for Med. Research.—Plague Bacteriologist. £1500.

Leeds Maternity Hospital.—University Tutor in Obstetrics, &c. £300.

London Hospital, E.—First Asst. to Medical Firm. £400.

London Lock Hospital, 91, Dean-street, W.—Clin. Asstships.

London Lock Hospital, 283, Harrow-road, W.—Second H.S. £150.

Malayan Medical Service.—Medical and Health Officers. See advt. for salaries.

Manchester Royal Infirmary.—R.M.O. £200.

Middlesex Hospital, W.—Sen. Asst. Radiologist. £500. Two Asst. Radiologists. Each £100. Radium Officer. £300, and Dental H.S. £50.

National Dental Hospital, Great Portland-street, W.—Hon. Anæsthetist.

Oldham Royal Infirmary.—H.S.'s. Each £200.

Queen Mary's Hospital, Stratford, E.—Res. M.O., H.P., two H.S.'s Obstet. H.S., and H.P. and Cas. O. Hon. Asst. P. Also Clin. Asst. to Throat, Nose, and Ear Dept.

Rainhill, Lancs County Mental Hospital.—Temp. Asst. M.O. 7 guineas weekly.

Reading, Royal Berkshire Hospital.—Third H.S., H.P., and first H.S. All at rate of £150.

Royal Army Medical Corps.—Commissions.

Royal College of Physicians, Pall Mall East.—Milroy Lecturer.

Royal Masonic Institution for Girls, Clapham Junction.—M.O. £350.

Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—Cas. O. £150.

St. Mary's Hospital, W.—Med. Reg. £200. Med. Supt. £400.

St. Peter's Hospital for Stone, &c., Covent Garden, W.C.—Clin. Assts.

Salford Royal Hospital.—Res. M.O. and H.P. at rate of £175 and £125 respectively.

Sheffield Royal Infirmary.—H.S., Asst. Cas. O. and Asst. Ophth. H.S. Each £60.

Southampton, Royal South Hants and Southampton Hospital.—Sen. H.S. £200.

Southwark Hospital, East Dulwich Grove, S.E.—Two Asst. M.O.'s. Each £300.

Staffordshire General Infirmary, Stafford.—H.P. at rate of £150.

Swansea General and Eye Hospital.—H.S. £175.

West Bromwich and District Hospital.—Res. Asst. H.S. £180.

Western Dispensary, 38, Rochester-row, Westminster, S.W.—Resident. £100.

West Ham County Borough.—Tuberculosis O. £900.

West London Hospital, Hammersmith-road, W.—H.P., H.S., Aural H.S. and Res. Cas. O. Each at rate of £100.

Winchester, Hampshire County Council.—Asst. M.O.H. £600.

The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointments: Chester-le-Street, Durham; and Camborne, Cornwall.

Births, Marriages, and Deaths.

BIRTHS.

CUNNINGHAM.—On Nov. 24th, at Chesham, Bucks, the wife of F. H. Lester Cunningham, M.C., M.B., B.S., of a daughter.

GALBRAITH.—On Oct. 28th, at St. Stephens, Launceston, the wife of Douglas H. A. Galbraith, M.C., M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

VELLUOT—LAWLOR.—On Nov. 12th, at Hong-Kong Cathedral, George Albert Vellnot, M.B. Edin., M.D. Paris, Croix de Guerre, of Shanghai, to Alice Elizabeth, B.A., M.B., Med. Schol. T.C. Dub., eldest daughter of Mr. H. C. Lawlor, M.A., M.R.I.A., Belfast.

WOOD—CAMPBELL.—On Nov. 29th, at The Charterhouse Chapel, Guy Wood, M.B., M.R.C.P., of The Charterhouse, London, to Margaret, daughter of Mr. and Mrs. Archibald Campbell, of Wolseley-road, N.

DEATHS.

BENSON.—On Nov. 25th, suddenly, at his residence, The Elms, Steeple Claydon, Bucks, Philip Lambert Benson, M.A., M.D., D.P.H., J.P., aged 73.

REYNOLDS.—On Nov. 25th, at Twyford Abbey, Willesden, Ernest James Reynolds, M.R.C.S., &c.

ROBSON.—On Nov. 28th, at "Stow Thorna," Guildford, John Robson, M.D., F.R.C.S.E., in his 82nd year.

STEWART.—On Nov. 24th, at Starborough House, Bilton-road, Rugby, Percy Peter James Stewart, F.R.C.S. Edin., O.B.E.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Notes, Comments, and Abstracts.

THE VALUE OF THE REFLEXES IN DIAGNOSIS.

Abstract of a Paper read before the West Kent Medico-Chirurgical Society on Nov. 14th, 1924,

BY J. S. RISIEN RUSSELL, M.D., F.R.C.P.,
PHYSICIAN TO THE NATIONAL HOSPITAL FOR NERVOUS DISEASES, QUEEN-SQUARE.

WHILE having no hesitation in selecting the reflexes, to the exclusion of every other method of clinical investigation, as the best means of arriving at a diagnosis of an affection of the nervous system, I am unable, with the same alacrity, to say on which of them I should rely most to the exclusion of the others, for the reason that they play such different rôles in the clinical picture of different disorders of the nervous system. For instance, what more important evidence of an organic affection than the pupil that fails to act reflexly to light and yet reacts on accommodation, but how limited is its application as compared with the large number of cases in which alteration of the plantar reflex from the normal flexor type to the extensor (Babinski's sign) serves us in diagnosis! If, however, we recognise that in the diagnosis of certain affections one reflex has a greater value than another, and that there must of necessity be exceptions in which the plantar reflex cannot compete with certain others in importance, it must be conceded that it affords the most valuable aid to diagnosis because of its applicability to so wide a range of cases.

Symptoms Real or Feigned.

I have only encountered one malingerer—and he well versed in every possible deception—who made use of the abnormal type of plantar reflex as part of the cleverly constructed clinical picture he presented, other parts of which, that concern our subject, being a fixed pupil that did not respond to light and absence of the conjunctival reflex on the same side. In all other cases of the kind in which assistance could be expected from it in attempts to defeat the malingerer the plantar reflex has never failed me.

A fit is, of course, one of the devices of the malingerer, and it also not infrequently happens that it becomes necessary to decide whether a fit is hysterical or truly epileptic. No real difficulty may present itself if one has the opportunity of observing the individual in the actual attack, but how seldom this happens. As a rule it is necessary for us to arrive at our conclusions from hearsay, and from an examination of the person after the attack is over. The state of the pupils and the conjunctival reflex, that are so important if we are fortunate enough to find the person actually in an attack, are no longer of any assistance, as the normal reflex response to light and to tactile stimulation may then be obtained, and yet the attack may have been one of true epilepsy. It is to other reflexes that we must turn our attention if we are to obtain any information from this source in attempting to arrive at a correct conclusion. The state of the knee-jerks, and the presence or absence of ankle-clonus should engage our attention, although all such manifestations are so fleeting that we may gain no valuable information from them, and yet do so from the state of the plantar reflex. So evanescent are all these phenomena, however, that I can recall only one instance in which I was able to demonstrate to a class all the phenomena that allowed of a positive diagnosis of epilepsy as opposed to hysteria or malingering. In this case the patient was brought in from the street in a fit, and reached the out-patient room in time for me to demonstrate that the knee-jerks were absent, that on their return they quickly became exaggerated and associated with ankle-clonus, while of the other abnormal phenomena present the extensor type of plantar reflex (Babinski's sign) was the last reliable sign to disappear and be replaced by the normal flexor response. I say reliable in that mere exaggerated knee-jerks which still obtained without ankle-clonus, or the abnormal type of plantar reflex, proved nothing. So transitory are these manifestations that no time should be lost in searching for evidence in these directions when confronted with a case in which the nature of a fit has to be decided.

Disease Functional or Organic.

Of the numberless cases in which the plantar reflex has proved invaluable in deciding between functional and organic nervous affections, two women, both of whom are dead, must serve in illustration. Both of these patients were submitted to me as cases of neurasthenia, and in neither of them could I find evidence to the contrary, except that they both revealed the abnormal type of plantar reflex on one side. One of these patients subsequently proved to be suffering from disseminated sclerosis, while in the other the disease which was commencing and which rapidly resulted in the death of the patient was what is known as subacute combined degeneration of the spinal cord. Both of these cases serve to remind us that not only does this abnormal phenomenon prove the existence of organic disease of the nervous system, but that it goes further and supplies us with the definite information that the central as opposed to the peripheral nervous system is at fault, and that, whether alone or in conjunction with other parts, the pyramidal system is involved in the morbid process.

Location Central or Peripheral.

The following case supplies an example of how the plantar reflex serves to determine the existence of central as opposed to peripheral affection, and of how it allows of the exclusion of one central disease of the nervous system as contrasted with another. A woman whose medical man sent her with a history of alcoholic excess and loss of power in her lower limbs, presented an appearance which confirmed the history of alcoholism. Her knee-jerks were absent, so that multiple peripheral neuritis, already suggested as probable by the history, was made all the more likely. Tabes has, however, to be borne in mind in any case in which the knee-jerks are absent, in spite of the person being alcoholic. The fact that the pupils reacted normally to light supported the probability of peripheral neuritis as opposed to tabes, a view strengthened by some tenderness elicited on squeezing the patient's calves. Certain as this diagnosis now appeared, however, it had to be considerably modified when it was found that the plantar reflex was of the extensor type, indicating that, however great a part alcoholic neuritis played in the production of the clinical picture, there must be central disease to account for the behaviour of the plantar reflex. A more detailed examination of the patient, including examination of the blood, established the diagnosis of subacute combined degeneration of the cord, which was confirmed not only by the subsequent clinical course of the patient's illness ending in death, but by the post-mortem and the microscopical examination of the spinal cord.

There is one aspect of the plantar reflex that calls for our attention, but which is overshadowed by Babinski's sign, and whose importance is, therefore, liable to be overlooked. I refer to its absence in functional cases in so far as response in the toes is concerned. This behaviour of the plantar reflex does not receive the attention it deserves. I would especially direct your attention to the possibility of its proving of assistance in some cases of accidents in which there is no evidence of structural damage to the nervous system, but only such functional manifestations as can be ascribed to shock. The case of a girl who received a blow on the back in an accident, and who, as a result, suffered from functional paraplegia for a time, will serve in illustration. She subsequently became able to walk, but continued to complain of pain in her back which incapacitated her and made walking difficult. Contrary to the oft-quoted statement that these patients recover as soon as they succeed in their legal action and receive monetary compensation, this girl continued an invalid, incapacitated and unable to earn her livelihood for a long time after, in accordance with what I expected would prove the case, as with exaggerated knee-jerks her plantar reflexes were absent. They were not of the abnormal extensor type which would have been evidence of structural damage to the spinal cord, nor were there concomitant signs to support a lesion of the nerve-roots or cauda equina and account for the absence of response on stroking the soles of the feet, the behaviour of the reflexes being clearly to be ascribed to functional disturbance. There could be no doubt that, no matter how much the girl might be consciously or unconsciously exaggerating her symptoms, a genuine substratum was present which justified the opinion formed and the prognosis given.

Result or Not of Accident.

It is necessary to consider the reflexes in their relation to accidents from another standpoint, however, the importance of which is well illustrated by two cases, in both of which tabes happened to be the organic disease present in the individuals who had met with the accidents. The first of the cases presented little difficulty, as the nature of the accident—a fall on the back when alighting from a tram-car that commenced to move forward before he was properly clear of it—scarcely provided material to account for absence of the knee-jerks in a man in whom there was no actual paralysis: while, even if this were disputed,

it could scarcely be argued with any show of reason that pupils which acted on accommodation but failed to respond to light revealed a defect that could be ascribed to the accident in question. The pupil reflex was equally to be relied on in the evidence it supplied in the other case to which I wish to refer, but in which, otherwise, the case was not so easily disposed of. It so happened that, in addition to a blow on the back, both lower limbs received injuries, and while those to the one limb could not possibly be held responsible for any alteration of the reflexes, it was otherwise in the other limb where some injury to the sciatic nerve might well have resulted, such as could account for loss of the ankle-jerk which was found present. But the ankle-jerk of the other limb was also absent, although the injuries to it could not possibly be regarded as affecting the sciatic nerve. Moreover, the plantar reflex on both sides remained unaffected, as would have been impossible had there been damage to the sciatic nerve sufficient in degree to abolish the ankle-jerk. Doubts were dispelled by the behaviour of the pupils, one of which failed to react to light, while the reaction was very poor in the other. I may perhaps be excused for reminding you that in a case of tabes the ankle-jerks may be absent when the knee-jerks are still present or vice versa, for in this case, contrary to what you might have expected, the knee-jerks were both present, indeed, unduly active, a state of things to be ascribed to the more general effects of the shock to the nervous system occasioned by the accident.

Relative Value of Certain Reflexes.

While it has been impossible to avoid giving first consideration to the plantar reflex, this must not be taken to derogate from the importance of the evidence to be derived from investigation of the knee-jerks. On approaching this subject, however, we are at once confronted with the question as to whether or not the knee-jerk is ever truly absent in a normal person, or whether, when not elicited, this is to be regarded as evidence of disease. All that need be said is that if it be true that there are people, otherwise normal, whose knee-jerks are truly absent, such cases must be sufficiently rare that they ought not to be allowed to invalidate the rule that absence of knee-jerks is to be taken as indicating in all probability the existence of organic disease. Far be it from me to assert that the knee-jerks are never absent in people otherwise normal, but one is, I think, justified in refusing to accept any such case without the opportunity of a personal examination, for the reason that many a patient comes to me without knee-jerks and has them restored to him before he leaves. This leads me to remind you that there are many fallacies open in attempts to elicit the knee-jerks, and that there are right and wrong ways of trying to bring reinforcement to the aid of the observer who is attempting to elicit the knee-jerk with its assistance. This being the case, no case should be diagnosed as one of organic disease on the evidence supplied by the knee-jerks alone, but with this phenomenon as possible evidence of organic disease, some other unequivocal physical sign in confirmation should be sought, and if discovered then, and only then, should so grave a sentence be passed on the individual under suspicion.

Important as the ankle-jerk may prove in the diagnosis of tabes, it plays but a secondary part to that of the knee-jerk, which is so usually absent when the patient comes under observation as to make it the exception that we find it necessary to fall back on the ankle-jerk for assistance in attempting to arrive at a diagnosis owing to the knee-jerk being still present. Although exceptional, such cases do, however, occur in which, without the assistance of the ankle-jerk, a positive diagnosis might not be possible, indeed, even an erroneous opinion might be formed.

In thus according priority to the knee-jerks, it must not be supposed that the ankle-jerk may not in its turn claim preferment, for it may even prove to be of greater diagnostic value than the knee-jerk. Indeed, so much may it dominate the situation that it is not a question as to whether it is more often of service than the knee-jerk in this particular class of case, but rather that it is always of service, while the knee-jerk can only call for attention from a negative standpoint. In any case in which there is affection of the sciatic nerve, or of the nerve strands which enter into its formation, the ankle-jerk is of supreme importance in diagnosis. One of the cases last referred to makes it evident that the behaviour of the ankle-jerk is all important in an affection of the sciatic nerve. In the ordinary routine of practice "sciatica" is naturally a common affection, but all cases of pain referred to the distribution of the sciatic nerve are not necessarily "sciatica." The state of the ankle-jerk supplies evidence as to whether the condition is purely functional or whether it has an organic basis, for in the former the ankle-jerk remains active, or even too active, while in the latter, provided the morbid process be sufficiently advanced, it is abolished.

COLONIAL HEALTH REPORTS.

HONG-KONG.

THE civil population of this colony, says Mr. A. G. M. Fletcher, Colonial Secretary, in his report for 1922, was estimated at the middle of the year under review at 662,200, distributed as follows:—Non-Chinese civil community, 15,200. Chinese population: City of Victoria (including Peak), 340,000; villages of Hong-Kong, 25,700; Kowloon and New Koolon, 133,000; new territories, 84,000; population afloat, 64,300. Total Chinese population, 647,000. Total civil population, 662,200.

The birth-rate for the year was 6·25 per 1000 among the Chinese community and 22·84 per 1000 among the non-Chinese community, as compared with 5·68 and 25·88 for 1921; but it is stated in a footnote that "this figure is wholly misleading, as it is impossible to register more than a portion of the births." The death-rate for the year was 25·88 per 1000 among the Chinese community, and 20·46 among the non-Chinese civil community, as compared with 20·29 and 18·08 for 1921. The number of deaths from malaria were 454, from plague 1071, and from small-pox 189. There were 4863 deaths from respiratory diseases (other than pulmonary tuberculosis). Pulmonary tuberculosis claimed 1385 Chinese and 25 non-Chinese victims, whilst other forms of tuberculosis represent an additional 686 deaths, making a total of 2096, or 14·8 of the total deaths among the community. Beri-beri was responsible for 829 deaths, as compared with 526 during 1921. During the past few years circulars have been distributed to all large employers of coolie labour calling their attention to the fact that beri-beri is produced by the consumption of white rice as the staple article of diet without a sufficiency of other foods, and advising that beans should be supplied with the rice when fresh meat or fresh fish cannot be afforded.

Hospitals.—Government hospitals consist of the civil hospital (to which is attached an isolated maternity hospital), the Victoria Hospital for Women and Children, and the Kennedy Town Infectious Diseases Hospital. The civil hospital contains 170 beds in 21 wards; 4447 in-patients and 25,892 out-patients were treated during the year. The maternity hospital contains nine beds for Europeans, plus three extra beds, and eight for Asiatics. The Victoria Hospital at the Peak contains 41 beds, and during 1922 178 patients were under treatment there. At Kennedy Town Hospital, which contains 26 beds, ten cases were treated in 1922, all being infectious. The lunatic asylum is under the direction of the superintendent of the civil hospital. European and Chinese patients are separated, the European portion containing 14 beds in separate wards and the Chinese portion 16 beds; 235 patients of all races were treated during the year, and there was one death. The Tung-Wa Hospital, opened in 1872, is mainly supported by the voluntary subscriptions of Chinese, but receives an annual grant of $8000 from the Government. Only Chinese are treated in this institution. Chinese as well as European methods of treatment are employed in accordance with the wishes expressed by the patients or their friends. Over half the number are now treated by Western methods. The hospital is under the supervision of a visiting physician, who is a member of the medical department, whilst two Chinese house surgeons, trained in Western medicine, are members of the hospital staff. There are 450 beds in the buildings, and 8336 patients were accommodated during 1922. The Tung-Wa also maintains a branch hospital for small-pox cases (Chinese only). It contains 60 beds, and during the year 46 cases were treated. The Alice Memorial and affiliated hospitals are managed and controlled by the missionaries resident in Hong-Kong, agents of the London Missionary Society, and consist of the Alice Memorial Hospital opened in 1887, the Nethersole Hospital (1893), the Alice Memorial Maternity Hospital (1904), and the Ho Miu Ling Hospital (1906). The number of in-patients in 1922 was 1667. The number of labours in maternity hospital was 457. To avoid the complete seclusion from friends and relatives, which removal of Chinese plague patients to the Kennedy Town Infectious Diseases Hospital entailed, four district plague hospitals are now maintained by the Chinese in various parts of the colony. The Kwong Wa Hospital for Chinese in the Kowloon Peninsula was opened in 1911. The existing buildings contain 244 beds, and 5142 patients were accommodated during 1922. The Chinese public dispensaries are institutions maintained in order to provide the Chinese with the services of doctors whose certificates will be accepted by the registrar of deaths, and with the services of interpreters who can assist the inmates of houses where a case of infectious disease has occurred. Coolies are engaged and ambulances and dead vans provided in order to remove cases of infectious disease to the infectious diseases hospital and dead bodies to the mortuary. The dispensaries receive sick infants and send them to one or other of the convents

and arrange for the burial of dead infants. Free advice and medicine are given and patients are attended at their houses. There are eight of these dispensaries in existence. The Government makes an annual grant of $7000 and the rest of the cost is defrayed by voluntary subscription.

The Medical School.—The University of Hong-Kong, incorporated under the local University Ordinance, 1911, is a residential university for students of both sexes. It includes the three faculties of Medicine, Engineering, and Arts. The Faculty of Medicine provides a five-year course of study in the usual pre-medical and medical sciences, supplemented by clinical work in the Government Civil and Tung Wa hospitals leading to the degree of M.B., B.S. The degrees of M.D. and M.S. may be obtained for post-graduate work. The degrees above mentioned are recognised by the General Medical Council for registration in Great Britain. The site of the University was given gratuitously by the Colonial Government. In the main buildings are housed the chemical, physical, and biological laboratories. Special medical buildings include schools of anatomy, physiology, pathological and tropical medicine, erected at the cost of Chinese gentlemen resident in the colony. During 1922 a benefaction of $500,000 was received from the Rockefeller Foundation for the foundation of full-time chairs in medicine and surgery. The complete scheme includes a grant of a further sum of $250,000 for a full-time chair of obstetrics and gynæcology, and provides for the creation of complete medical units for the teaching of the three subjects in the Government Civil Hospital. The University is to make provision out of its own funds for assistants to the professors of anatomy, physiology, and pathology, and it is desired to erect a hostel for medical students in proximity to the hospital. Eight scholarships of $200 each were founded by the China Medical Board for medical students who shall have carried out their pre-medical studies at the Canton Christian College, the University undertaking to remit fees to the extent of $100 a year.

ST. VINCENT.

The report for 1922, prepared by Mr. Robert Walter, C.M.G., administrator, states that the estimated population of the colony on Dec. 31st, 1923, was 46,744. The birth-rate for the year was 41·99 per 1000 and the death-rate 22·21. Illegitimate births numbered 1455, or 74·1 per cent. of the total number of all births. The general health of the colony throughout the year was good. A mild type of influenza was prevalent. The colony escaped altogether the visitation of alastrim, which has caused so much distress in some of the neighbouring islands. Infantile diarrhœa was more prevalent than in 1922, and the number of deaths from this cause, 138, shows an increase of 26 as compared with the previous year. The case mortality was 8 per cent., as against 13 per cent. in 1922. It is noteworthy that children's diarrhœa is worse during the rainy months, while the case mortality rate is greater during the dry months. The campaign against yaws by intramuscular injection of novarsenobillon continued to be pressed vigorously with very satisfactory results. During the year 3492 cases, some 7 per cent. of the population, were treated, and of these 79 per cent. were returned as cured. The following hospital accommodation is provided: Colonial Hospital, Kingstown, 86 beds (including 4 beds for private paying patients); District Casualty Hospital, Georgetown, 4 beds; and District Casualty Hospital, Chateaubelair, 4 beds. St. Vincent is one of the healthiest of all the West Indian islands. The climate may be divided into two seasons, wet and dry; the dry season from January to May, with an average rainfall of 4·04 inches per month, and the wet season from June to December, with an average of 8·22 inches per month. The coolest months are December to April. The temperature throughout 1923 varied from 76·3° F. to 80·4° F.

TURKS AND CAICOS ISLANDS.

The area of these islands is estimated to be about 166 square miles, but as no thorough survey has ever been made this figure may be below the mark. The Turks Islands consist of two inhabited islands, Grand Turk and Salt Cay, four uninhabited islands or cays, and a large number of islets and rocks. These islands derived their name from a species of cactus found there by the early settlers, the scarlet head of which was said to resemble a Turkish fez. The Caicos Islands, which lie to the west of the channel, surround the Caicos Bank, a triangular shoal 58 miles long on its northern side and 56 miles long on its eastern and western sides respectively. The entire group, known as the Turks and Caicos Islands, extend for a distance of 75 miles from east to west and 50 miles from north to south, and constitutes part of the long chain of low islands and banks extending from off the Florida coast to the Navidad Bank, lying north of the Dominican Republic. The Turks and Caicos Islands are generally considered to be healthy, but during the year 1922 (according to the report of Mr. H. E. Phillips, the Commissioner), owing to various causes, the public health was not as good as usual. The infant mortality was higher than in former years, owing, no doubt, to the drought which necessitated the use of well-water for drinking purposes. The Government medical officer at Grand Turk reported that "this change of the drinking-water caused numerous cases of bowel trouble in both old and young," and expressed his opinion that "this was responsible for many of the deaths that occurred among the young children and infants." Alastrim, which had been imported from the Dominican Republic during the previous year, still continued to make its appearance during the first few months of 1922. Malaria, which is nearly always present, broke out in a severe form during the latter months of the year. Tuberculosis, which seemed to be on the decrease during previous years, increased to a notable extent during 1922, owing, in the opinion of the Government medical officer, to the lack of proper food during the drought and also to the lack of ventilation in the houses. The hospital accommodation provided consists of eight beds at the Manning Hospital at Grand Turk and four beds at the Cottage Hospital at Cockburn Harbour. As regards the Manning Hospital, during the year nine cases were admitted to the surgical ward for operation, and 16 to the medical ward for treatment. The tent which had been erected in the hospital grounds to receive alastrim cases during the previous year was kept in readiness during the first part of 1922 to receive any new cases which might be imported. The medical officer reported that the isolation of these cases of alastrim, and other precautionary measures, such as vaccination and the inspection of all ships arriving from abroad, were no doubt instrumental in preventing an epidemic of this loathsome disease from invading these islands. The estimated population of the Turks and Caicos Islands at the close of 1922 was only 5711. The white population, numbering about 200, is composed almost entirely of the descendants of Bermudians. During the year 211 births were registered, giving a birth-rate of 37·5 per 1000. During the same period 179 deaths were recorded, the death-rate being 32 per 1000. The readings taken at the Weather Bureau Station at Grand Turk, at a height of 11·3 feet above the sea-level, were as follows: Rainfall, 16·30 inches; maximum temperature, 87° F.; minimum, 60°.

NIGERIA.

The area of Nigeria, including the mandated area of the Cameroons, is approximately 367,928 square miles, and it is thus larger than any British dependency other than Tanganyika, India, and the self-governing dominions. It is more than three times the size of the United Kingdom. The population, according to the 1921 census, is 18,631,442. There are about 4000 Europeans temporarily resident, chiefly in the employ of the Government and of mercantile and mining companies. The country is not suitable for European settlement. Of the native inhabitants the greater number are of pure negro race, but in the north there are Berber and negroid tribes. In the more backward communities cannibalism still occurs, and is probably more common than is realised, and cases of slave dealing are still to be found amongst the tribes to the east of the Niger. In the report for 1923, prepared by Mr. H. O. S. Wright, senior assistant secretary, it is stated that the colony and protectorate have throughout the year enjoyed comparative freedom on the whole from epidemic diseases and from the attendant mortality that follows an epidemic through a country. The outbreak of cerebro-spinal meningitis that prevailed in the Kontagaro Province during 1922 recurred in the month of February, but the infection expended itself by March and April. The country has been particularly free from any severe outbreaks of small-pox, though during the first six months of the year a small recrudescence of the disease took place in its old haunts, comprising the Okigwi and Enugo districts. In the northern provinces it made its presence felt along the Benue River in the Mora and Yola provinces. In the Cameroons a moderate outbreak of the disease occurred in the districts of Buea, Mamfe, and Bamenda. It is of some interest to record that a few cases of relapse fever occurred in Lagos mainly during the month of September. "Health Week," initiated in Lagos in 1922, was held for the second time in December, 1923. Self-help being the principle, much of the organisation was left to the people themselves who had gained experience of its working previously. It is to be hoped that as the years go by and the people become better educated, more and more will interest themselves in assisting to promote the health of the community. A visit to the Iqu water-works was a real success, for over 1000 persons availed themselves of the opportunity of seeing how the town water was purified.

The seasons in Nigeria depend rather on the rainfall than on temperature. They are, as a rule, well defined. The dry season, with its attendant "Harmattan," commences in the north of the country in October and ends in April. It is of shorter duration in the south, and at Lagos generally lasts from November to March with only intermittent

"Harmattan." This is a dry north-easterly wind which brings with it a thick haze composed of minute particles of dust and shell. During its prevalence the nights and early mornings are cold, but the days are very hot, and it is during this period that the maximum diurnal variations occur. Generally speaking, the lowest mean temperature is in the months of July and August, and the lowest minimum recorded temperature at the beginning and end of the year. The highest mean and maximum temperatures are, as a rule, recorded in March and April. At the end of the dry season numerous tornadoes herald the approach of the rainy season which lasts until October, with a slight break in August. In the south the prevailing wind during this season is from the south-west, and with it comes the rain, which is remarkably heavy along the coast and decreases rapidly as it travels inland. The average annual rainfall at Bonny on the coast is 163 inches (in 1921 245 inches were registered). At Lokoja, situated at the confluence of the Niger and Benue, it is 48 inches; and at Sokoto, in the north-west of Nigeria, it is only 25 inches. The average rainfall at Lagos is 72 inches. In the northern parts of Nigeria there is literally no rain whatever for the greater part of the dry season; for 12 years no rain has fallen at Sokoto during the four months November to February.

LEEWARD ISLANDS.

These islands form the most northerly group of the "Lesser Antilles" in the West Indies, and lie between 18° 27′ and 15° 10′. The colony is now a federation, comprising the five presidencies—formerly separate colonies—of Antigua; St. Christopher (usually called St. Kitts), with which presidency is included Nevis; Dominica; Montserrat; and the Virgin Islands. The report for the year 1922–23, recently issued, states that the total population of the colony, according to the census of 1921, was 122,242, showing a decrease of 4951 when compared with the census for 1911. The birth- and death-rates are given as follows:—

	Population.	Birth-rate per 1000	Death-rate per 1000.
Antigua	29,512 ..	37·24 ..	33·51
St. Kitts	21,650 ..	39·8 ..	33·8
Nevis	11,854 ..	37·5 ..	20·4
Anguilla	4,362 ..	33·2 ..	18·3
Dominica	38,108 ..	39·83 ..	31·11
Montserrat ..	11,957 ..	34·5 ..	21·9

The general health of the colony during the year was satisfactory, and although epidemics of alastrim existed in Dominica from July, 1922, to August, 1923, the disease was of a comparatively mild type, only six deaths occurring. Thorough vaccination took place throughout the colony, and it is considered improbable that a similar invasion will occur for a long time to come. There is a central lunatic asylum at Skerrets, Antigua, and there are two leper asylums, one at Rat Island, Antigua, and the other at Fort Charles, St. Kitts. The mean rainfall in Dominica was: at 14 Leeward stations, 76·31 inches; at 3 Windward stations, 115·49 inches; at 4 inland stations, 211·51 inches; and at 5 Lasoye stations, 97·24 inches. In Antigua the average rainfall, taken at 70 stations for 49 years, is 44·18 inches, and the rainfall for 1922 was 35·14 inches, or 9·04 inches below the average. In St. Kitts the rainfall at La Guerite station was, for the year 1922, 39·7 inches.

ST. HELENA.

His Excellency Colonel Robert Francis Peel, C.M.G., the Governor, in a report on this colony for 1923, estimates the population at 3654. Births during the year numbered 114 (not including two still-born) and deaths 28, giving a birth-rate of 31·19 per 1000 and death-rate of 7·66 per 1000. The general health of the community continued to be satisfactory. A mild but widespread epidemic of influenza prevailed in the months of January and February, repeating the experience of the previous year. During these two months the trade wind frequently fails, and this occurrence certainly favours the spread of air-borne infection. There were 157 admissions to hospital during the year and 7 deaths occurred, equal to a death-rate of 4·5 per cent. New and convenient quarters were provided for the nursing staff at St. John's Villa, which has been taken over by the Colonial Government from the Admiralty, and which, after complete renovation, was occupied by the nurses in April. The mean temperature for the year was 62·0° F., the absolute maximum being 80·1° on July 25th, and the absolute minimum 50° on July 8th. The total rainfall recorded at Hutt's Gate was 45·74 inches, at Plantation 45 inches, and in Jamestown 10·14 inches.

QUEEN ALEXANDRA.

To the Editor of THE LANCET.

SIR,—On Dec. 1st Queen Alexandra attained her eightieth birthday (having been born at Copenhagen on Dec. 1st, 1844). She was married to King Edward VII. (then, of course, Prince of Wales) on March 10th, 1863, and in THE LANCET of March 14th of that year you had a leading article commenting upon the happy event, in which you stated that "the universal blessings which hallowed our welcome of a fair young stranger to her future home implied more than the exuberant greeting of an enthusiastic people. Past happiness and future hope found therein a simultaneous expression," and also "we do from this marriage anticipate special results." Sixty-one years have elapsed, and many special results from that marriage have been realised, as will be admitted on all hands with grateful recollection, not the least being the King Edward's Hospital Fund and the Alexandra Fund, established in 1912, with its exceedingly popular Rose Day, by which over a million pounds have been raised. Those who have seen the various books on the lives of King Edward and Queen Alexandra will have a good idea of their beneficent activities.

I am, Sir, yours faithfully,

Nov. 27th, 1924. W.

*** In regard to the Alexandra Fund, Miss C. May Beeman, C.B.E., the organiser, informs us that in 1925 the Rose Day will be held on the second and not the third Wednesday in June, that is, on the 10th, in order not to clash with Ascot.—ED. L.

OBSTINATE CONSTIPATION.

To the Editor of THE LANCET.

SIR,—In regard to the request by "Clinical" in THE LANCET of Oct. 11th for suggestions as to treatment for a young patient suffering from chronic and unrelieved constipation, if this condition is induced by hypo-thyroidism (a likely cause), I suggest a course of thyroid gland treatment, ½ gr. doses, which may be combined with 1 gr. pituitary whole gland, t.d.s., a.c. Should there be any duodenal insufficiency, eukinase, in granular form, after meals, is also indicated. Frequent and excessive purgatives should be avoided. The recurrent rise of temperature is possibly caused by intestinal intoxication, due to colonic stasis, and is often a grave complication. Suitable diet and abdominal massage, &c., will assist the patient.

I am, Sir, yours faithfully,

Trinidad, Nov. 11th, 1924. R. C. BENNETT, M.B.

To the Editor of THE LANCET.

SIR,—In answer to the request made in "Clinical's" letter published in the last issue of THE LANCET to hand (Oct. 11th) I would suggest that he try treatment with bile, ox or pig, by mouth and by enema. Very little stress is laid on the use of bile in the university courses on therapeutics, but recent experience has convinced me that no other treatment is so efficient in cases of obstinate constipation such as "Clinical" describes. I could cite several instances quite as bad, if not worse, that have been completely cured by this simple mode of treatment. Perhaps the reason why bile is so seldom used is because it is such an unpleasant thing to take by mouth, besides being liable to go bad, but pills of pig and ox bile are made in quite a convenient form by Burroughs, Wellcome and Co., and both pills and a preparation for use as an enema are made by the Laboratoire Panbiline, Annonay, Ardèche, France.

I am, Sir, yours faithfully,

South Africa, Nov. 6th, 1924. C. LUNDIE.

TEACHING ON CONTRACEPTION.

To the Editor of THE LANCET.

SIR,—In view of your contention, in an annotation published last week entitled Teaching on Contraception in Medical Schools, that students' text-books on gynæcology omit to discuss the principles and technique of contraception, you may note that in "Gynæcology and Obstetrics," by Dr. J. S. Fairbairn, reviewed in your own columns on its appearance some six months ago, a section in the chapter on Social and Ethical Aspects is devoted to an exposition of this subject.

I am, Sir, yours faithfully,

A STUDENT.

*** Dr. Fairbairn's remarks on the subject are clear and impartial.—ED. L.

A WARNING.

THE Chief Constable of Leeds sends word that a man who gave the name of Mr. Ferguson, aged about 70, called on a doctor in that city and asked for financial assistance. He stated that he was a doctor, and obtained his M.B., Ch.B. Edin. in 1894, and had practised in Harley-street and Henrietta-street, and also in Edinburgh, and at present he was residing at Bradford. He produced a letter purporting to be written by another doctor, who had apparently assisted him to the extent of 10s. No one with the name and qualifications given appears on the Medical Register.

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CONTENTS

THE WHOLE OF THE LITERARY MATTER IN THE LANCET IS COPYRIGHT.

AN ADDRESS on Invalidity from Chronic Joint Disease. By JAMES R. KERR, C.B.E., Ch.M. 1217

AN ADDRESS on the Present Position of Insulin Therapy. By GEORGE GRAHAM, M.D., F.R.C.P. 1265

ORIGINAL ARTICLES.

Chronic Backache in Gynæcology. By DANIEL DOUGAL, M.D. 1220

Massive Collapse of the Lung in Acute Poliomyelitis. Case Reports and Comments. By JOSEPH C. REGAN, M.D. 1222

Conjugal Tuberculosis. By STEPHEN ROWLAND, M.D., D.P.H. 1224

The Prevention of Stillbirth. By GILBERT I. STRACHAN, M.D., M.R.C.P., F.R.C.S. ... 1227

Femoral Hernia. Operative Treatment by Roux's Method. By FRANK HARVEY, F.R.C.S. 1229

CLINICAL AND LABORATORY NOTES.

Avulsion of the Anterior Superior Iliac Spine Treated by Operation. By A. G. ORD, F.R.C.S. 1230

Two Cases of Sarcoma in Children. By D. R. BLUNN, M.R.C.S. 1230

MEDICAL SOCIETIES.

Royal Society of Medicine: Section of Surgery.—Malignant Disease of Thyroid Gland 1231
Section of Orthopædics: Sacro-iliac Disease 1232
Section of Otology: Exhibition of Cases and Specimens 1233

Medical Society of London: Insulin in the Treatment of Diabetes. 1234

North of England Obstetrical and Gynæcological Society: Mobile Backward Displacements of the Uterus 1235

REVIEWS AND NOTICES OF BOOKS.

Anaphylaxis and Sensitisation. By R. Cranston Low, M.D., F.R.C.P. .. 1237

Recent Advances in Medicine, Clinical, Laboratory, Therapeutic. By G. E. Beaumont, D.M., F.R.C.P., D.P.H., and E. C. Dodds, M.B., B.S., B.Sc. 1239

Diseases of the Skin. Edited by Prof. Dr. P. Mulzer 1239

Toxicology, or the Effects of Poisons. By Prof. Frank P. Underhill, Ph.D. 1239

Unscientific Essays. By Prof. Frederick Wood Jones, M.B., D.Sc. 1240

The Site of the Globe Playhouse, Southwark. By W. W. Braines, B.A. 1240

Principles of General Physiology. By Sir W. M. Bayliss, D.Sc., F.R.S. 1240

Fundamentals of Human Physiology. By R. G. Pearce, M.D., and Prof. J. J. R. Macleod, M.B., F.R.S. 1240

LEADING ARTICLES.

PAYMENT FOR RESEARCH. 1241

STIFF AND PAINFUL JOINTS 1242

THE CONDUCT OF A G.M.C. ELECTION 1242

ANNOTATIONS.

Poliomyelitis 1243

Cancer of the Œsophagus 1243

Improved Health Conditions of Mauritius 1244

Chronaxie 1244

Blood Reactions in Anæsthesia 1245

The late Thomas Richard Jessop—(*With Portrait of Bust*) 1245

Chronic Hepatitis 1246

Syphilis and Permission to Marry 1246

The Treatment of Femoral Hernia 1247

The late Dr. Alexander Lewers 1247

Crown Galls 1247

Pseudomyxoma Peritonei 1248

MODERN TECHNIQUE IN TREATMENT.

C.—Treatment of Tuberculous Peritonitis. By Mr. H. W. CARSON 1249

PUBLIC HEALTH SERVICES.

Reports of Medical Officers of Health: Derbyshire.—Somerset.—Gloucestershire.—Norfolk.—Lincolnshire. — East Sussex.—Isle of Ely.—Guernsey 1255

Infectious Disease in England and Wales.. 1257

THE GENERAL MEDICAL COUNCIL.

Committees: Public Health, Pharmacopœia, Education, Examination, Dental Education 1257

SPECIAL ARTICLES.

The Early Diagnosis of Acute Poliomyelitis ... 1250

Royal Commission on Lunacy and Mental Disorder: Evidence of Executive Officers, and Medical Superintendents 1236

Infectious Diseases Abroad: Disease Resembling Encephalitis Lethargica in Japan .. 1251

Medicine and the Law: Valid Certificates: A Misunderstanding Cleared Up.—Stopes *v.* Sutherland: A Petition to the Lord Chancellor.—Fragments of Glass in Food at a Restaurant..... 1251

Ireland: The Irish Free State and the Medical Register 1252

Paris: Prof. Bergonié.—Doctors and Taxation . 1253

Vienna: High Hospital Fees and Lack of Clinical Material 1254

THE SERVICES.

Royal Naval Medical Service.—Royal Army Medical Corps.—Royal Air Force 1258

CORRESPONDENCE.

The Alleged Sterility of Present-day Bacteriology (Prof. W. W. C. Topley) 1258

The Status of Pathology (Dr. Charles Powell White) 1259

The Effect of Splenectomy on the Production of Experimental Purpura (Dr. S. Phillips Bedson) 1259

The Clinical Significance of Constipation (Dr. Alfred C. Jordan) 1259

A Case of Insulin Poisoning (Dr. Robert V. B. Emmons) 1260

Measles Twice (Dr. Ernest K. Gawn) 1260

Lupus Erythematosus and Alopecia Areata (Dr. J. Hargreaves Robinson) 1260

Suction in Surgery (Mr. C. Hamilton Whiteford) 1260

A Welcome Disclaimer (Prof. S. G. Gant) 1261

MEDICAL NEWS.

University of Cambridge: Diploma in Psychological Medicine..... 1261
University of London.... 1261

Gynæcological Hospital Accommodation in Liverpool 1234

West Kent Medico-Chirurgical Society ... 1236

Royal Commission on National Health Insurance 1243

The late Dr. John Robson 1248

The late Dr. G. D. Compston 1248

Chelsea Hospital for Women 1261

Toronto University Award 1261

An Empire Food Council. 1261

Metropolitan Asylums Board 1262

Fellowship of Medicine and Post-Graduate Medical Association ... 1262

Post-Graduate Entente Between America and England 1262

Royal Institution of Great Britain 1262

Bethlem Royal Hospital . 1262

Presentation to Dr. H. Campbell Thomson ... 1262

New Children's Hospital for Kensington 1262

Presentation to Dr. E. W. Hope 1262

Christie Hospital and Cancer in Manchester.. 1262

Bury Infirmary 1263

Society of Apothecaries of London 1263

St. George's Hospital: New Out-patient Department 1263

OBITUARY.

Sidney Johnson Taylor, M.D., M.R.C.S. 1248

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: Opening of the Session. —The King's Speech .. 1263

House of Commons: The Debate on the Address 1263

NOTES, COMMENTS, AND ABSTRACTS.

Malaria and Mosquitoes in Australia 1266

A Disclaimer 1266

The Antiseptic Value of Tooth Pastes 1266

Czecho-Slovakian Ornament 1266

Medical Diary 1264

Appointments 1264

Vacancies 1264

Births, Marriages, Deaths 1264

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An Address
ON
INVALIDITY FROM CHRONIC JOINT DISEASE.

Delivered before the Royal Institute of Public Health

BY JAMES R. KERR, C.B.E., CH.M. GLASG.,
SURGEON IN CHARGE OF THE PILKINGTON SPECIAL HOSPITAL, ST. HELENS, LANCS.

IN the report on the Incidence of Rheumatic Diseases, issued by the Ministry of Health, there are arresting figures showing the amount and the cost of industrial invalidity from diseases, acute and chronic, classed as "rheumatic." We find that chronic joint diseases cost the approved societies nearly £1,000,000 a year in sick benefit, and are responsible for the loss of over 1½ million weeks of work per year. From the financial standpoint alone the importance of chronic joint diseases is therefore very great.

The chronic joint diseases to which I shall refer include chiefly the conditions variously described as rheumatoid arthritis, osteo-arthritis, and arthritis deformans, other forms of arthritis being excluded. The thesis I submit consists of two parts—(1) that the term "rheumatic" when applied to chronic joint diseases is frequently misleading, and is a source of danger to the patient; (2) that intensive orthopædic treatment can do much to counter the disabilities associated with these diseases.

DIVERGENT VIEWS OF THE PATHOLOGY OF RHEUMATIC DISEASES.

Now, although these chronic joint diseases are generally classified as "rheumatic," there is hardly ever a complete and convincing discernment of the steps and stages from their chronic condition back to the well-defined specific fever known as acute rheumatism. Yet, as Prof. R. Stockman, of Glasgow, points out, "rheumatoid arthritis" is not an inappropriate term since, as in acute rheumatism, so also here, we have (*a*) lesions of the fibrous tissue of the locomotor system, and (*b*) the joints prominently involved. The confusion of nomenclature is very great, and we find eminent authorities at diametric variance one with the other, the reason being the unsatisfactory state of the ætiology and pathology of the disease. Indeed, on any accepted classification there are, say, 15 per cent. of cases which do not fit into any of the categories.

For the present purpose I cannot deal with the bacteriological researches of the past, nor can I even refer to the present lines of investigation. We do know, however, that many varieties of micro-organisms are capable of producing arthritis in man and in rabbits. We also know that during an attack of acute rheumatism a certain amount of immunity must be established, seeing that natural cure takes place. As Prof. Stockman says:—

> "The reason of the rapid and complete disappearance of inflammation from the joints is of extreme interest. It can only be explained by supposing the development of a local immunity through the formation of an antibody, but such immunity is evidently not very lasting, as the same joint may again become inflamed during the illness. So far as I am aware no researches have ever been made to elucidate this. It is possible that the closed cavity of a joint favours the sufficient accumulation of an antibody, for the same rapid subsidence of inflammation does not take place in the open fibrous tissue structures, but rather the contrary. In them the inflammation tends to linger on."

We may take it, then, that our pathological knowledge of acute rheumatism has got some length, seeing that we acknowledge the existence of causal organisms, the formation of antibodies, natural cure, and therefore some degree or type of immunity. Further, it is well known that in a joint suffering from acute rheumatism the synovial membrane is in a state of intense hyperæmia, the cells on its surface proliferating and containing many nuclei. These are the changes one finds in any infection of a joint, and they are similar to the reactive efforts of any acutely inflamed region.

Many chronic joint disabilities called "rheumatic" run a less clearly observable course. We know that the liability to attacks of acute rheumatic fever diminishes after the age of 35 years, and that the bulk of the chronic joint lesions are recorded in patients over that age. Yet 80 per cent. of these chronic joint patients give *no* history of a previous attack of acute rheumatism, and so one can infer that acute rheumatism does not predispose to joint disability of the chronic type at a subsequent date, and it is even conceivable that a degree of immunity is established against what we may reckon as a low-grade infection, whose results take months or years to become manifest.

There is considerable evidence, clinical and pathological, tending to suggest that the causal agent produces its various effects, subject to the modifying conditions of its immediate environment and of the physiological or pathological state of the joints and synovial membranes of the host, and that throughout the range of chronic "rheumatic" disabilities definite co-relation exists. I would class these disabilities under one category, although the prominent manifestations in differing types demand treatment apparently different, yet fundamentally and essentially based on definite visualisation of the pathological changes, the present stage, and the likely course of the disease in each case. The most appropriate name can be determined later, but it is of interest to note that the Encyclopædia Britannica (Medical) in 1901 stated that the terms arthritis deformans, rheumatoid arthritis, and osteo-arthritis are synonymous and indistinguishable; that the American view is that arthritis deformans is a synonym for rheumatoid arthritis and quite distinct from osteo-arthritis; and that authorities in both countries are found to accept or reject these classifications. It would be clearly wrong to dogmatise, but I am bound to say that in the important matter of the amelioration or cure of the patient's disability the pathological pictures I have formed have proved most useful as foundations on which to base prognosis and treatment.

COURSE AND ORDER OF THE JOINT CHANGES.

Briefly, I assume that cartilage and bone changes in the joint follow after failure of the synovial membrane and antibodies within the joint. The stage of even extensive hypertrophic villous synovitis may endure for years before cartilage erosion at the weight-bearing surfaces takes place, but wherever the hypertrophied synovial membrane is constantly in contact with cartilage some erosion is liable to occur. In operating on such knee-joints one observes the hyperæmia and loss of lustre of the cartilage at the region of the subpatellar pad, at the margins of the condylar notch which is non-weight-bearing, and also at the periphery where villous masses lie constantly overlapping. Accordingly recession of the hypertrophic synovial membrane is one aim of our treatment associated, of course, with orthopædic considerations regarding joint function. One is aware that much research has been directed towards the discovery of the causal organism of this chronic villous synovitis, and we find that a disease has been called "chronic villous arthritis" on account, no doubt, of the cartilage erosion observed. To explain the observation of the two appearances within the joint—namely, the villous hypertrophy and the cartilage erosion—it has been suggested that probably several different organisms are producing the long-continued irritation. I urge that the avascular cartilage is affected secondarily, and that chronic villous arthritis is the later stage of chronic villous

synovitis—i.e., when cartilage erosion has occurred—and, in fact, that those chronic joint diseases actually consist of different stages or combinations of stages of the one disease.

Theories and views may require modification as further facts are disclosed. It may be that recurrent attacks of subacute or mild rheumatism in a joint have the effect of devascularising, sclerosing, and atrophying the synovial membrane and rendering it less liable to respond—10, 20, or 30 years later—to the continuous or intermittent stimulus of organism or toxin.

The Synovial Membrane.

It seems to me that the end-result in a joint varies with the type, previous history, and present condition of its synovial membrane. I believe that synovial membrane has a highly specialised function, of great adaptability, comparable to the omentum or the peritoneum, which also are called upon to deal with a variety of assaults. As an example of the adaptive and defensive powers of the synovial membrane one may cite the case of sepsis in the knee-joint. The modern surgical treatment of sepsis in the knee-joint is based on an enlightened appreciation of the power and function of the synovial membrane, and has given results which are in contrast to those of the former methods, and recovery of function has been obtained in hundreds of cases. Yet when we consider a joint having a different type of synovial membrane, as, e.g., an inter-phalangeal joint, we find that a correspondingly unsatisfactory response is made by it, and the most modern treatment of infection in such a joint gives results which are often very bad. The synovial membrane seems to me to be the important factor in the resistance of a joint to invasion—microbic or toxic, chronic or acute. The pathological changes resulting seem to have close relation to the functioning power of the synovial membrane of the particular joint concerned. It must be borne in mind that synovial membrane is not really an epithelial structure. It consists of flattened, irregular, stellate, connective-tissue cells, with definite gaps in the surface, so that the term epithelioid is more accurate. It has between it and the fibrous tissue capsule a layer of soft fatty tissue which pushes and expands the synovial membrane down into any vacancy in the joint as the normal movements are executed. There are loops of blood-vessels in intimate relation with the peri-articular vessel groups, and on stimulus the vessels of synovial membrane become engorged, and a reactive, defensive hyperæmia is produced. Proliferation of the epithelioid cells occurs, and eventually synovial fringes may be formed, as is observed in numerous cases. The knee-joint responds readily to treatment, and this, I think, is due to the reactive possibilities of its synovial membrane. After the synovial membrane has become fibrous, sclerosed, and devascularised, then one expects and finds that the cartilage becomes thinned, and degeneration and atrophy proceed. Later fibrous tissue from the bone, and ultimately bone itself occupies the joint spaces.

Degenerative Process in Different Joints.

In the case of the knee-joint there is a long and successful resistance to this degenerative process, but in the hip-joint its advance is steady. Yet in these cases of "morbus coxæ senilis," or "chronic osteo-arthritis" of the hip, which are not uncommon in patients between 30 and 40 years, it may be that in the absence of a completely adequate protective and adaptable synovial membrane, some degree of protection is still offered. At all events, in cases where X ray examination shows a relatively early stage of the disease we find that appropriate orthopædic and physiotherapeutic measures give some relief to the general condition, and also seem to effect some retardation in the progress of the disease. In the presence of advanced bony changes one has, of course, to use some of the modern plans to relieve pain and secure stability and power of locomotion.

In the finger-joints reactive hypertrophy of synovial membrane is limited by the firm and tight capsule and periarticular structures, and one finds degenerative changes relatively early, although it has to be remembered that these are secondary to contracture and are chiefly of the decalcification type, which is amenable to treatment.

THE PRACTICAL ASPECT.

The foregoing will probably serve to indicate the enormous field open to research in this subject. With regard to what may be called the practical aspect my experience of cases previously investigated elsewhere, who had suffered removal of various infected organs and had undergone medical and massage treatment, but who nevertheless were crippled with joint lesions, makes it manifest that while research was seeking the actual ætiology a great deal remained undone to relieve what one may call the symptoms—which really are of first concern to the patient. It seemed to me clear that the first warning of joint injury—microbic or toxic—was given through the synovial membrane. In particular, knee-joints gave early signs, although many patients delay seeking help till the signs are advanced and serious crippling threatens or is actually present.

A Typical Case.

Let me sketch a typical case—a married woman of 48 who has been bedfast for six months owing to contractural flexion of both knees, which were swollen and painful when moved. The label rheumatism had been applied. The friends and neighbours sympathised. The eldest daughter was recalled home from a good post, and as she had been the chief wage-earner for the household there was financial catastrophe, especially for its younger members. All this was because of the patient's inability to walk about the house and attend to even directional domestic duties. What the woman suffered from was chronic villous hypertrophy of the synovial membrane of her knee-joints, and modern treatment has proved successful beyond expectations. I need not detail the procedures we employ, but it is sufficient here to say that everything is guided by orthopædic considerations and with a view to the functional needs. The knees are straightened without delay, all harmful reaction in the joint being avoided. Rest and repair are encouraged by supporting appliances modified to suit, and from time to time as progress is made. Intensive physiotherapy directed to the atrophied muscle groups, and particularly towards increasing the blood-supply collateral with that of the pathological synovial membrane, such agencies as hot water, hot air, melting paraffin wax, ionisation, faradic stimulation, massage, mechano-therapy, &c., being used for the purpose, the forms of treatment and the dosages being selected appropriately. In three weeks the patient should be able to stand up, and in two weeks more to walk with two sticks, although her hips will still be stiff from flexion-deformity developed while she was bed-fast. Progress then goes on rapidly, and she is restored to some degree of working capacity in, say, three months. In her case X ray examination reveals no bony change, and in all probability bone changes will develop very late in the disease, if at all, provided that the posture and function of the joints are maintained by the proper means.

A joint untreated degenerates and disintegrates, with erosion of cartilage, and fusion of bone following the usual course, and accompanied by hip, ankle, and foot deformities, which render even the nursing services most difficult and discouraging in the comfortless downward path which inevitably awaits the patient. Briefly told, that is the story of thousands of women. The balance seems to be delicately poised between power of resistance and the gradual assailability of synovial membrane as regards these chronic infections. Appropriate treatment commenced at a reasonably early stage turns the balance in the

majority of cases. The necessity for wage-earning, or the demand of domestic duties prevails in a great number of cases to delay the moment of seeking help, and so one finds these patients working on for years with steadily increasing disabilities, relieved from time to time by periods of rest, till a stage of total disability arrives, when general and local conditions are unfavourable for rapid or complete recovery. About 1 in every 100 working women between the ages of 45 and 55 years suffers from some chronic joint trouble, most commonly in the knee, and both knees are often affected. The number of cases among men is almost as great. Chronic joint diseases cost the approved societies about £1,000,000 per year (as has been stated already), but there has to be reckoned also the personal loss of wages and the suffering. This enormous bill can be reduced by early and adequate treatment on the lines I have outlined. It has to be remembered that many women between 45 and 55 years of age are employed in domestic service, mostly outdoor, and being dependent on their earnings they tend to suffer long till crippling disables them and the duration of their incapacity becomes very great. Sooner or later they become a charge on the country.

In the most broad way I have depicted one type of case, its course and its treatment, and the results.

PRINCIPLES OF TREATMENT.

In many respects the patient in better financial circumstances is often not much more fortunate. Her general condition is well looked after, but the local or orthopædic needs may have insufficient attention, and time, from this point of view, seems to be lost in visiting various resorts according to the season, and to overlooking several primary warnings. Errors can be made by attempting to relieve "rheumaticky" knees without reviewing the entire locomotor apparatus. Systematic examination usually reveals a predisposing cause of some prolonged strain. It may only be an increasing eversion and pronation of the feet associated with some degree of knock-knee, but to stabilise the limb by rectifying a habitually bad posture with possibly the help of modifications in the footwear may make all the difference in the activities of a woman. Foot strains and foot pains from any cause require correction. The patient's general fitness may have been well maintained, but the "creaky" and stiff knees do not respond satisfactorily to the general treatment which has been undergone, and usually require specific and specialised attention. The rate of progress of the crippling is, of course, slow, but, on the other hand, it has to be noted that after a good degree of recovery has been obtained by treatment, the joints can be kept in satisfactory condition by an occasional short course of treatment.

A similar chronic condition of synovial hypertrophy is common among men also, and in view of the frequency of an injury being the attributable cause, a careful preliminary examination of the knee is required. When a blow is stated to have been received the situation is nearly always described as just below the knee-cap. In cases of a twist or wrench the same region is indicated. On examination one commonly finds a thickened and tender subpatellar pad. The question of aggravation by injury or accident arises, but we need not discuss it here.

The Operation of Synovectomy.

Under treatment improvement or recovery follows. A great deal of industrial invalidity in men arises from this condition of the knee-joint. In certain cases the recurrent effusions, associated with the great hypertrophy of the synovial membrane, have damaged the knee ligaments, and instability is becoming an additional complaint, wage-earning power being absolutely lost. In selected cases I have performed the operation of synovectomy, excising in one mass the entire suprapatellar pouch with its excessively hypertrophied and its grossly villous synovial membrane. The posterior compartment of the joint, and any fringes or villi at the periphery or elsewhere, are cleared out as much as is possible. This operation is performed through the split-patella route and a painless, weight-bearing, and movable joint is obtained in most cases. Even with a limited movement in the joint the stability and freedom from pain are highly acceptable to the patients. In the case of a working man free knee movement is an important additional consideration. We plan the post-operative treatment for early active and passive movements—i.e., commencing about the tenth day, and continue towards full range of movement with contemporaneous development of muscular power by faradic stimulation, massage, and exercises. The procedure is utilised at the Mayo Clinic, and the success of their earlier cases is now encouraging them to operate in less advanced conditions, and this seems a logical course, for at the operation one can eradicate at least 90 per cent. of the disease in the joint. We thus see that invalidity from this very common form of chronic disease in the knee-joint can be enormously reduced by the methods described. For most cases intensive physiotherapy treatment with correction of simple orthopædic errors is sufficient. In the ultimate or penultimate stages, carefully planned and possibly extensive operative intervention may be required.

Similar methods are applicable to other joints, which, however, do not usually offer so good a prognosis as in the case of the knee. In children and young adults the rapid course which the disease sometimes takes in the direction of cartilage erosion and its sequelæ requires a most guarded prognosis. Each case and condition requires a full review and careful diagnosis. Postural and static and most painful disabilities of the feet, often called "rheumatics," which the sufferers, especially women, accept quite patiently as a heritage, do not come under our scope except from the point of view of error in diagnosis and their relative susceptibility to alleviation by proper means. Nor need one refer further to the so-called "rheumatic" pains in knees, hips, and spine due to sudden alterations in the height of the heel of the shoe, either to meet a changing fashion or to maintain deportment as weight and age increase. In so many cases are "bunions" quasi-traumatic and postural results, that the association with chronic joint diseases need not occupy us here.

In the upper limb disease of the shoulder follows the course of the hip, but the weight-bearing factor is absent. Here periarticular lesions, unless treated, are followed steadily by postural cripplings, which later require vigorous and thorough correction.

In the elbow-joint we find that chronic disease is accompanied at an early stage by bone changes, which are visible under X ray examination. Here the differential diagnosis from myositis ossificans requires to be borne in mind, particularly as the patient may be only, say, 30 years of age, and the question of occupational injury may arise. The wrist and hand are particularly affected by what is described as rheumatoid arthritis or infective periarthritis, the latter term being accurately descriptive. Women are great sufferers from this type, being affected according to various age-groups, from two to six times as frequently as men. The inter-phalangeal joints of one or both hands are first involved. They first appear swollen and spindle-shaped, but pain is not prominent. The general appearance of the patient suggests a toxic state, and, as one would expect, further joints are progressively involved, particularly those of the carpus. X ray examination shows no bony change at first. The swelling is due to thickening of the synovial membrane, the capsule, but chiefly of the periarticular fibrous tissues. Later, when X ray examination shows great modification of the joint structures, these consist of the signs of atrophy and disuse. Later, again, there is dislocation from contractures, fibrous ankylosis, and ultimately bony union. The early bone changes are those of decalcification, which are essentially trophic

changes, and are similar to those found frequently after nerve lesions.

PHYSIOTHERAPY FOR DEGENERATIVE CHANGES.

Experience of intensive physiotherapy treatment of such degenerative changes goes to show that in many cases they are definitely amenable to great improvement, so that subsequent X ray examination shows restoration of the joint contours and joint spaces, and that is a point I want to urge, not only because of the financial loss to the worker and the State, but also because of the patient's suffering and distress of mind which follow the incidence of this disease, and the attitude of helplessness which has tended to encompass all connected with its course. Here, as in the chronic knee condition, the synovial membrane remains till the penultimate phase in a state of reactive hypertrophy, but in these smaller joints, of a different structure, offering less room for expansion, and probably defective in blood-supply, for example, the joint of the phalanges or of the carpus, the accompanying accommodative hypertrophy and proliferation of the synovial membrane cannot take place to a sufficient extent. But if one gets cases before new fibrous tissue predominates in the joint cavity, much can be done by physiotherapy treatment. In later stages other methods are employed according to the needs of the case, and the ingenuity and orthopædic skill available. The treatment of these conditions is an uphill fight at all times, and not being associated with dramatic effects, such as are achieved in acute abdominal work, it demands of those in charge of the case temperamental qualities of a kind recognised well by the unfortunate victims.

My remarks have aimed chiefly at establishing a working basis on which treatment should proceed. A large experience under particularly favourable conditions convinces me that it is well worth while urging for early recognition and treatment of these chronic joint diseases which are contributing to so much suffering, invalidity, and loss of money to the industrial population.

On the ætiology and pathology of chronic joint disease earnest and able investigators are at work. Much has been achieved, but the last words are still to be written. Here, as in virtually all instances of scientific advance, practice breaks ground for theory, and it is not beyond the record to say that hope is being radiated on the afflicted from the results of intensive, coördinated, persistent treatment, carried on with confidence and in the modern orthopædic spirit.

CHRONIC BACKACHE IN GYNÆCOLOGY.*

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A GOOD deal has been written in recent years about chronic backache in women, and on the whole the tendency has been to take a broader view of the subject. Formerly, a woman with backache was considered to be the peculiar property of the gynæcologist, but the pendulum has now swung in the other direction and large numbers of these cases are claimed by the general physician and the orthopædic surgeon. Martyn,[1] writing from the physician's point of view, believes that many of the backaches are due to infection and obtains good results by attention to septic foci in the mouth and throat. Goldthwait[2] thinks that undue mobility of the sacro-iliac joints as a result of pregnancy or even menstruation is an enormously frequent cause of the backache, and would therefore consider most cases to be orthopædic in origin. When full allowance has been made for these cases there will still remain a large number in which a definite gynæcological lesion is present, and the importance of this lesion is shown by the good results which follow its removal by surgical treatment. For instance, Bullard[3] claims 85 per cent. of cures in 721 cases of backache treated in this way.

It is generally agreed that women suffer more frequently from backache than men, and their greater susceptibility must therefore be due to physiological or occupational factors peculiar to the sex. Certain forms of housework no doubt put a special strain upon the spinal muscles, but these occupations are not more tiring than the heavy work of unskilled labourers for instance, and so far as I know the latter do not suffer in any special way from pain in this region. The occupational factor must therefore be relegated to a position of secondary importance, and the real cause sought for in some lesion directly or indirectly connected with the sexual organs. The function of menstruation, the growth of the uterus, and the stretching of neighbouring structures in pregnancy, the strain on the abdominal muscles, pelvic joints, and supports of the uterus and pelvic organs during labour, and the special liability of the female sexual organs to infections and tumour formation, readily explain the greater incidence of backache amongst women.

Backache is a very common symptom in gynæcological patients, but varies much in severity and may be so slight as to be of little importance. In some women it is obviously severe, in others it is only mentioned in reply to a leading question, so it is difficult to obtain reliable information as to its frequency. One hundred and twenty-nine hospital patients were asked specifically if they were troubled with backache and 43 per cent. answered in the affirmative. This figure no doubt includes many of the slighter cases and rather exaggerates the importance of the symptom. A better plan is to take a series of cases where the clinical history has been investigated by one individual in a uniform way and each patient allowed to describe her symptoms without any prompting. There are obvious disadvantages in this method, but on the whole the results will give a fairer idea of the real importance of backache. I have studied the case-cards of 1000 patients seen in my own consulting-room and the results form the basis of the following observations. In the series I found that 235 cases, or about 23 per cent., complained of backache, and that it was the principal symptom in a third of this number.

Gynæcological backache is generally confined to the lower lumbar and sacral regions, especially the latter, and is not usually the only or indeed the chief symptom. Its value in diagnosis is therefore small, and for this reason it is apt to receive very little attention. The pain is often looked upon as part of a neurosis—"some women's backs always ache"—but although this may be true of some cases, there remain a large number where a definite lesion can be discovered and the pain cured or very much relieved by suitable gynæcological treatment. The backache varies much in character; it may be described as a dragging or twisting, as a dull constant ache, or as a soreness. It is generally located over the sacrum, sometimes to one or other side, and is often associated with pain in the lower abdomen and less frequently with pain down the thighs. One patient wrote: "I am not free from pain in the lower region of my back about six square inches." The pain may be constantly present or only felt after exertion or at definite times in relation to the menstrual periods. It may be of long standing, dating from before marriage or even from puberty, but in the majority of married women the trouble is stated to have commenced shortly after a confinement.

Social and Obstetric History.

The great majority of the cases investigated belonged to the class who either have to earn their own living or perform heavy household duties at home. Twenty-two of the patients were single, rather less than 10 per cent.

* Being one of the opening papers of a discussion before the Manchester Medical Society on Dec. 3rd.

The figures as to pregnancy were as follows:—

Married, nulliparæ	48 (21 per cent.)
,, uniparæ	54 (23 ,, ,,)
,, multiparæ	102 (45 ,, ,,)

Gynæcological Lesions Associated with Backache.

The diseases found to be most commonly associated with backache were genital prolapse, chronic cervicitis, endometritis and metritis, adnexal and peri-uterine inflammation, uterine fibroids, adenomyoma, and cancer of the cervix. Table I. gives the total cases in each group, and the number and percentage of those complaining of backache.

TABLE I.

Disease.	Total cases.	Cases of backache.	Per-centage.
Genital prolapse	227	66	29
Chronic cervicitis	44	26	59
Chronic endometritis ..	108	46	42
Chronic metritis	53	11	20
Adnexal and peri-uterine inflammation	101	25	24
Uterine fibroids	82	15	18
Adenomyoma, &c.	29	15	51
Cancer of cervix	35	9	25
Ovarian tumours	31	3	9

There were 63 cases with no gynæcological lesions, and 10 of these complained of backache. It is not contended, however, that of over 200 cases of backache only 10 were non-gynæcological: the results of operative treatment show that even when the gynæcological lesion is cured, some of the patients still complain of this symptom, and in many of these the pain was probably due to an entirely different cause. Retroversions and retroflexions of the uterus have not been placed in a separate group although they are generally looked upon as the principal causes of backache. They do play a part, but not a predominant one, and in my opinion the size of the uterus, the condition of its walls, and the strength or otherwise of the supporting structures of the pelvic floor are of more importance in this respect than mere changes in the direction of the uterine axis. Mobile retroversions and flexions have been included in the cases of prolapse, chronic endometritis, and chronic metritis, and the adherent cases naturally fall into the group of adnexal and peri-uterine inflammations.

The term chronic endometritis is open to criticism on pathological grounds, and is used here merely as a matter of convenience to describe the type of case so fully investigated by Donald and Fletcher Shaw.[1] The symptoms as described by these authors are menorrhagia, metrorrhagia, leucorrhœa, dysmenorrhœa, and chronic pain, and two or more of these are generally present in each case. The physical signs are enlargement of the uterus with undue tenderness on bimanual examination. Table II. shows the position of the uterus and the incidence of backache in 108 cases belonging to this group.

TABLE II.

Chronic endometritis.	Total cases.	Backache present.	Per-centage.
Anteversion and anteflexion .	78	31	40
Retroversion and retroflexion	30	15	50

The figures show that, although backache is undoubtedly more common with retroversion and retroflexion, the greater frequency is not sufficient to warrant the importance attached to these displacements in this connexion.

Results of Operative Treatment.

All the backache cases were "followed up" and asked about the effect of the operation on this particular symptom. Replies were received from 152 patients as follows: No backache since operation, 69; much improved, 42; no better, 41. The improved cases generally stated that the backache was now only felt after any special exertion. The replies taken as a whole show that 73 per cent. of backaches associated with a gynæcological abnormality were cured or much relieved by appropriate surgical treatment, and that in 45 per cent. the pain completely disappeared after the operation.

Results of Treatment.

The results of treatment in the different groups must now be examined.

Genital Prolapse.—The operation performed in every case was a double colporrhaphy with or without amputation of the cervix. Replies (51): No backache since operation, 30; much improved, 12; no better, 9. The results in cases of prolapse are therefore distinctly good, the backache being cured or much relieved in 80 per cent. of cases. The figures include seven cases of complete prolapse and all were completely cured by colporrhaphy.

Chronic Cervicitis.—Two cases were treated by total hysterectomy (and not relieved of their backache), the others by curetting and amputation of the cervix. Replies (20): No backache since operation, 7; much improved, 6; no better, 7. The results in this group are moderately good, 65 per cent. being cured or much relieved.

Chronic Endometritis.—The majority were treated by curetting, the results from this operation being as shown in Table III.

TABLE III.

Uterus.	Cured or much relieved.	No better.	Total.
Anteversion and anteflexion ..	10	3	13
Retroversion and retroflexion ..	4	3	7

In addition to the above, the uterus was replaced by a round ligament sling operation in four cases, but the results were very disappointing. One patient was rather better till she became pregnant again when the pain recurred, the other three reported that the backache was as bad as ever. The figures are much too small to throw any light on a subject about which there is such a wide difference of opinion, and it is only fair to state that very high claims have been advanced by those who make a practice of replacing the uterus by operation in cases of backward displacement. Bullard found that backache was complained of in 129 of 149 cases of mobile retroversion and succeeded in curing about 80 per cent. by replacement operations. Donald and Fletcher Shaw lay no special stress on backache in chronic endometritis even when the uterus is retroverted, but include it under the heading of chronic pain. In 107 cases treated by curetting this symptom was improved in a little over 84 per cent., and the general result of the operation was rather better in cases where the uterus was retroverted. As to the good results claimed by ventrifixation and similar procedures, these authors believe that if some degree of prolapse is associated with the other changes in the uterus the sensation of weight and dragging may be relieved by these operations. It is very easy to overlook a certain degree of prolapse especially when the patient does not actually complain of anything coming down, and I think that in many of the cases of retroversion with backache the pain is chiefly due to weakening of the pelvic floor. My figures in the prolapse group prove that backache can be cured or much relieved by colporrhaphy in a large percentage of cases, although the uterus still remains in a backward position after the operation.

Chronic Metritis.—Replies (8): No backache since operation, 4; much improved, 1; no better, 3. The uterus was anteverted in eight and retroverted in three of the 11 cases of chronic metritis. One case was treated (and cured) by curetting and radium, the others by total or subtotal hysterectomy. A third of the patients were not relieved of their backache even after removal of the uterus and appendages.

Adnexal and Peri-uterine Inflammation.—Replies (21): No backache since operation, 9; much improved, 7; no better, 5. 76 per cent. were cured or much relieved by operation, and the results were better in cases where both appendages were removed as well as the uterus.

Uterine Fibroids.—Replies (13): No backache since operation, 7; much improved, 4; no better, 2. In only four of the 13 cases was the tumour sufficiently large to cause pressure on the pelvic walls and the backache was presumably due to the weight of the enlarged uterus.

Hysterectomy, either total or subtotal, was performed in every case and the ovaries were also removed in all except two (both cured).

The results are quite good, but the percentage of complete cures is not as high as one would expect. A heavy and enlarged fibroid uterus is such an easily understood cause of backache that its removal would be thought to give complete relief in almost every case.

Adenomyoma, &c.—In this group are included the adenomyomata involving the tissue behind the cervix and also the cases of "tarry" cysts or "endometriomata" of the ovaries. Replies (10): No backache since operation, 3; much improved, 3; no better, 4. The results as regards backache are not very good considering that the uterus and appendages were removed in every case, but this is not surprising when it is remembered how the growth infiltrates the rectal wall and pelvic cellular tissue. One of the worst cases of chronic backache I have seen belonged to this group. At the first operation double ovarian "tarry" cysts were removed but not the uterus. The pain in the back became more severe, and as much nodular thickening could be felt behind the cervix it was decided to try the effect of a total hysterectomy. This was done, but the adenomyomatous tissue could not be completely removed as it surrounded the rectum and extended on to the lateral pelvic wall. The patient recovered well from the operation, but her backache remains as bad as ever.

Cancer of the Cervix.—Nine cases of cancer of the cervix complained of backache and of these all but two were inoperable. Wertheim's operation was performed in the operable cases and both are well at the present moment and quite free from backache.

The Mechanism of Gynæcological Backache.

I am convinced that the great majority of gynæcological backaches are due to certain muscles becoming fatigued as a result of extra strain being thrown upon them. The spinal muscles may be affected in this way in the case of large abdominal tumours, but with lesions confined to the pelvis the strain falls chiefly on the muscular components of the pelvic floor, the levatores ani. These muscles are normally protected against undue strain by the strong fibromuscular tissue of the parametrium, but when that barrier is weakened by stretching or by the weight of a large uterus or tumour they may become fatigued and cause aching pain in the back. This appears to be a reasonable explanation of those cases of backache associated with enlargement of the uterus or prolapse. There may be more than one factor present in a particular case, and this may account for the fact that the backache still persists after removal of the more obvious cause. For instance, of the cases treated by removal of the uterus and appendages, 30 per cent. still complained of this symptom after operation. Fatigue occurs more readily in some individuals than in others, depending on the condition of the nervous system, and we therefore find that the backache is not a constant symptom in these conditions and may even be improved by attention to the general health and without removing the actual cause.

In cases where there is no question of pelvic floor weakness the pain may be due to irritation of the sensory nerves which serve the pelvic viscera and are contained in the sympathetic system. These fibres are the axons of spinal ganglion cells, and so the pain may be referred to the somatic area supplied by these same ganglia—i.e., the back and lower abdomen. The source of irritation may be some abnormality of the sexual organs themselves (inflammatory conditions of the uterus, especially the cervix, &c.), or a lesion affecting the pelvic cellular tissue and involving the sympathetic nerves and plexuses there (advanced cancer of the cervix, adenomyoma, pelvic cellulitis, &c.).

Conclusions.

1. Chronic backache is an important symptom amongst gynæcological patients, being present in from 20 to 30 per cent. of all cases.

2. The importance of backache in uncomplicated retroversion and retroflexion has been much exaggerated as it is found almost as frequently in cases where the uterus is in a forward position.

3. The most important factor in producing backache is fatigue of the pelvic-floor muscles, and this may result from increased weight of the uterus but more frequently from stretching of the parametric tissues.

4. Where there is a definite indication for surgical treatment the backache can be cured or much relieved in over 70 per cent. of cases, the results being especially good in cases of prolapse treated by colporrhaphy.

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MASSIVE COLLAPSE OF THE LUNG IN ACUTE POLIOMYELITIS.

CASE REPORTS AND COMMENTS.

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THE occurrence of massive collapse of the lung in acute poliomyelitis is a condition of such rarity as to warrant the report of a case. A search of the literature of Heine Medin's disease has been entirely without result so far as the finding of a similar example is concerned. It is doubtful if the rarity of atelectasis in acute poliomyelitis is as great as this would seem to indicate. Other instances may have been overlooked in the study of the more prominent clinical phenomena, or may have been considered as pneumonic complications. This is the more likely, as the condition would presumably originate mostly in the bulbo-spinal forms of the disease in which the medulla and upper cervical region of the cord are involved, and such cases are many times rapidly fatal. The following report of a patient presenting this unusual symptom of a massive collapse of the lung was observed at the Kingston Avenue Hospital.

S. M., girl, aged 10 months, was admitted on Nov. 10th, 1921, with a diagnosis of acute poliomyelitis.

History.—Family history irrelevant. Previous history: varicella at 4 months.

Present Illness.—On Nov. 9th the child developed a high fever (104° F.) and the physician called made a diagnosis of pneumonia. Towards evening the parents observed that the child was breathing very rapidly, and that there was retraction of her lower chest with respiration. The child was in a drowsy state and "slept all day." On the 12th it was noticed that the neck was weak, so that the child could not hold her head up; the fever, however, had entirely subsided. On the following day the temperature remained normal, and for the first time a suspicion of poliomyelitis was entertained by the family physician.

Physical Examination on Admission.—The child is a well-nourished and very well-developed baby, mentally quite bright, but at present extremely irritable on being disturbed, and quite acutely and desperately ill. She lies in her crib with her head turned to the right, crying continually in a peculiar low, soft, feeble voice. The skin and lips are of a rather cyanotic colour. Her respirations are extremely embarrassed. The respiratory rhythm is irregular and of exaggerated jerky type, characterised in inspiration by a marked upward and forward movement of the chest with the accessory muscles brought into play, and a visible tugging movement of the larynx and trachea, associated with a retraction of the upper abdomen, giving it a scaphoid appearance. On expiration there is an equally sudden downward movement of the ribs and a protrusion of the abdomen. When the child cries the respirations become more rapid, and assume a still more irregular rhythm, and beads of perspiration stand out on the face. The pulse is very irregular. The second sound at the apex is of a slightly impaired quality. MacEwen's sign is present and markedly

positive. The neck is painful on manipulation and when the child is lifted up the head drops backward. The pupils are equal and react to light. The expression of the face is very anxious, the skin is of an ashen-grey colour with cyanosis of the lips, and dilatation of the alæ nasi occurs with inspiration. There is an asymmetry between the two sides of the face, noticeable when the patient cries.

Lungs.—The left side especially shows pronounced physical signs which might at first be taken for those of a pneumonic consolidation or effusion. There is impairment of resonance over the left lower posterior chest, including the axilla from the seventh rib downward, and over this same area there are markedly diminished breath sounds or rather almost inaudible breath sounds. Above this area is broncho-vesicular breathing approaching in a few places a pure bronchial note; no râles of any kind heard. On the right side posteriorly there are dullness and slight diminution of breath sounds over the lower few interspaces.

Abdomen.—Liver and spleen are not palpable.

Extremities.—The left upper extremity is partially paralysed, the child apparently being unable to lift the arm above the head. The lower extremities and right upper extremity are apparently normal, except for the loss of the patellar reflexes and slight polyneuritis in the former. No Kernig, Oppenheim, or ankle clonus. The back and neck muscles are weak and the child is unable to sit up. The temperature, pulse, and respiration ratio on admission was 99°, 128, and 62. At no time was the temperature subsequently elevated above normal, and the respirations reached 32 by the fourth day in the hospital.

Subsequent Clinical Course.—Nov. 16th: The peculiar type of breathing still persists but the rate is normal when the child is not disturbed. The paralysis of the face has almost entirely disappeared. The child's general appearance is greatly improved since admission. She still perspires when she cries, and at such times the chest excursion increases greatly and she becomes slightly cyanotic. The cardiac arrhythmia persists, although it is not so pronounced. Her neck muscles and right upper extremity are still paralysed, and the muscular power in the right leg is less than in the left. 20th: General condition is improved. There has been a change in the lung signs. The percussion note over the left lower chest has now altered to an impaired resonance and the breath sounds are more audible at the base than previously, but there is still a marked diminution in vesicular breathing. The right side, on the contrary, presents more pronounced signs. There is impairment of resonance over the entire right lower posterior chest with dullness above. On auscultation there is intensified respiration somewhat broncho-vesicular in type over the right interscapular region, and absence of vesicular breathing over the lower four or five interspaces. No râles and no temperature. 26th: Lungs: The right side anteriorly shows slight impairment of resonance and diminished aeration, especially of the right axillary region. Posteriorly, there is dullness throughout most all of the right posterior chest with an almost flat note over the lower few interspaces, and on auscultation broncho-vesicular breathing over the right upper chest, diminished breath sounds over the upper portion of the right lower, with absence of breath sounds at the base. The left side posteriorly shows an almost normal percussion note and only a diminution in respiratory murmur over the lower three interspaces. Neck and back muscles weak, right lower and left upper extremities unchanged. Dec. 8th: Symptoms unchanged with the exception of the lung findings. The signs anteriorly over the right side are same, but posteriorly there is now normal percussion and breathing as far as the seventh rib, downwards. From there one finds dullness and absence of breath sounds. The left side is practically normal. 13th: The child's general condition and symptoms have improved. With support she can stand and even walk. Jan. 5th: Child convalescent. Breathing is now normal. The left lung shows normal physical signs; the right lung presents a very slight diminution in resonance and in breath sounds at the right base. There is slight dropping of the right shoulder apparently from atrophy of the muscles around the shoulder-joint and she cannot raise her arm above a right angle with her body. The heart rhythm is regular. Dec. 15th, 1922: She walks well, and the gait is steady, but there is slight limping with the right leg, which is considerably under the left in development. The chest is well developed, with normal respiration. No atelectatic areas found. Lumbar punctures were made on nine occasions, from 10–26 c.cm. of clear fluid being withdrawn under pressure, marked at first and afterwards moderate.

Laboratory Data.—(1) Spinal fluids:—Nov. 15th: Globulin, —; Fehling's, 3 plus; 30 small lymphocytes per c.mm. 21st: Globulin, 1 plus; Fehling's, 3 plus; 20 small lymphocytes per c.mm. Colloidal gold curve: 4–1–2–2–1½–½–0–0–0–0. Dec. 15th: Globulin, —; Fehling's, 3 plus; 7 small lymphocytes per c.mm. Colloidal gold: 1–1–1–1½–0–0–0–0–0–0. (2) Cultures from nose and throat: Negative for K.-L. bacilli; Schick test negative. (3) Urinary analysis: Negative for albumin and sugar. (4) Blood count: Total leucocytes, 11,200; polymorphs, 50 per cent.; small lymphocytes, 44 per cent.; large lymphocytes, 5 per cent.; transitionals, 1 per cent.

Discussion.

The diagnosis of acute poliomyelitis and atelectasis is scarcely open to question. A pneumonia and pleurisy with effusion would certainly not have presented the symptoms and signs which accompanied the pulmonary process. The rarity of massive collapse of the lung in acute poliomyelitis lends importance to the case, but a greater interest still attaches to the manner of its production. It is not necessary here to cite in detail the various subdivisions of the two main types of acquired atelectasis—namely, the obstructive and the compression forms—to show that the ætiological factor could not have been any of the well-recognised causes. There are only two possible explanations: (1) the compression of the base of the lungs by the paretic diaphragm, which, although passively, nevertheless carried on an increased respiratory excursion accompanying the dyspnœic type of breathing (which was so peculiar to the case); and (2) the obstruction of the bronchi by inhibition or paralysis of the broncho-dilator fibres of the vagus with over-activity of the broncho-constrictor fibres or tonic activity from irritation of the broncho-constrictor fibres; in either case leading to a constriction of the bronchial muscles and a collapse of the portion of the lung innervated. Between the two possibilities it is not an easy matter to decide, and, indeed, we are in a similar position in this regard to that in which Pasteur [1] and Bradford [2] found themselves in attempting to explain in the former author's cases post-operative massive collapse and in the latter's the same condition occurring after gunshot wounds, especially of the chest. Both were strongly inclined to believe that the condition of relative immobility and retraction of the chest wall and diaphragm on the affected side, which was present, was primary and the collapse secondary. The chest wall in this patient was not immobile, neither was the diaphragm. Hence, we cannot attribute it to this cause. Even if they were, it is certainly open to question whether diaphragmatic weakness or paralysis alone is a frequent cause of atelectasis, for if so we should certainly have expected it long ago to have found a place under the symptomatology of that condition. This case is more suggestive, of course, in the sense that the diaphragm, although in an inversion of its normal rhythm, had a very forcible although passive movement, which might possibly have compressed the bases of the lungs.

The second possible explanation demands serious thought. As far back as 1842 Longet concluded that the vagus nerve supplied constrictor fibres to the bronchial muscles, and subsequently many classical experiments have been carried on which appeared to prove that the lung may be made to contract on vagal stimulation. Mention may be made of the work of Roy and Graham Brown [3] in this regard. Later Dixon and Brody [4] concluded that the vagus contained both broncho-constrictor and broncho-dilator fibres which they believed were controlled by a double medullary centre. They showed that collapse of the lung on the one hand or over-distension on the other might be produced, depending on the force of inflation in one instance and the time allowed for deflation in the other, as a result of bronchial constriction following vagal stimulation in experimental animals. Within the past few years Vernet [5] has called attention to the work of Lesbre and Maignon, who showed that excitation of the eleventh cranial nerve caused the contraction of the muscular layers of the bronchi, and had advanced this as an additional support of his view that the pneumogastric is the sensory nerve and the spinal accessory the motor nerve to the lungs.

Both Pasteur and Bradford admit the possibility of some obscure reflex phenomena in their cases of atelectasis as a cause of the immobilised chest wall and collapsed lung. Pasteur went further and stated that the post-operative cases he had collected had commonly occurred after laparotomies on the lower abdomen, and that the initial disturbance had been either within or in close proximity to the area of distribution of some branches of the vagus nerve. Neither Pasteur nor Bradford was able to present any facts which would clearly indicate that the pulmonary collapse was purely secondary to the immobilisation of the chest wall or the weakness or paralysis of the diaphragm.

Our patient, it will be remembered, presented symptoms which were decidedly suggestive of a cardio-respiratory syndrome of bulbar origin. Peabody, Draper, and Dochez,[6] in their classical monograph on poliomyelitis, have observed a very similar cardiac arrhythmia in several of their fatal cases and applied the name of a rhythmic arrhythmia to it, believing it also to be a vagus nerve disturbance. Wickman[7] has mentioned likewise the peculiar bulbar crisis with attendant changes in pulse and respiration seen at times in Heine Medin's disease. One is therefore thoroughly justified in considering a bulbar lesion in our patient, and if there is a broncho-constrictor and broncho-dilator centre in the same area it is perfectly logical to infer that they might have been concerned in the acute congestive lesion induced by the polio-myelitic virus in the immediate region of these nerve centres. From such a standpoint this case is important as it gives better grounds than previously cited instances for the belief that a true paralytic atelectasis may exist. Further research is required to throw light on this problem, and to show whether paralytic atelectasis may exist, and to study the peculiar reflexes arising which may account for some of the phenomena seen in such cases as those reported by Pasteur and Bradford.

Summary.

A case of acute poliomyelitis is reported in which there occurred a massive collapse of the lower lobes of the lungs, involving first predominantly one side and later the other. Atelectasis in poliomyelitis is a complication of considerable rarity, and could not have been produced by any of the commonly recognised causes of the condition. Two possible explanations are to be considered: (1) The compression of the bases of the lungs by the paretic but over-active diaphragm which kept pace with the dyspnœic respiration which was so peculiar to the case; and (2) the paralysis of the broncho-dilator fibres or the over-activity of the broncho-constrictor fibres of the vago-spinal nerves, in either case leading to constrictor action and a collapse of the dependent lung. While the former explanation cannot be excluded as the primary cause the latter may be more logically incriminated in our case, owing to the concomitant existence of a cardio-respiratory syndrome of bulbar origin. The possibility of a paralytic atelectasis should be given more serious thought in the future both from the experimental and clinical standpoints, so that if it really occurs, as our case is suggestive in indicating, its existence may be established on a more definite basis.

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CONJUGAL TUBERCULOSIS.

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THE subject of conjugal tuberculosis has received much attention from medical writers, who, however, display a great lack of unanimity as to the frequency of its occurrence, the manner of infection, and the morbidity of the disease in the two partners.

Divergent Opinions.

The generally accepted opinion has been that conjugal infection seldom occurs, but recently Dr. E. Ward, tuberculosis officer for South Devon, has published results which seem to show it is by no means uncommon. If we accept the inhalation method of infection as the only one which takes place in phthisis, one would expect, considering the intimate relations of a married couple (where they are, for more than 8 hours out of the 24, under ideal conditions for infecting each other) transmission of the disease from one partner to the other would be relatively a common occurrence. It would appear to a casual observer that it must be merely a matter of time before one partner infects the other, where one is an open case of phthisis—i.e., is excreting tubercle bacilli in the sputum, as practically all phthisis cases do before the end. Any case in which T.B. cannot be found in spite of marked physical signs in the chest should be looked upon with suspicion, and the diagnosis reconsidered. The writer is convinced that many cases of what Dr. Clive Riviere [1] so aptly labels "damaged lung" have been in the past, and still are, looked upon and treated as phthisis. Nevertheless, in spite of ideal conditions for the transmission of infection, it very seldom occurs, and Fishberg,[2] after a careful study of the subject, goes so far as to say it never takes place. He examined 9 women and 161 men. Out of this number there was only 3 per cent. of cases where husband and wife were tuberculous. On the other hand, Sir Hermann Weber [3] found in 68 persons, male and female, who, with more or less pronounced consumptive taint, had married healthy partners, that ten of the partners of these 68 cases became consumptive, or 14·7 per cent. Dr. Ward [4] in THE LANCET gives the results of his examination of husbands and wives of tuberculous patients, and out of a total of 156 examined (120 wives and 36 husbands) he found 91 to be tuberculous, the astonishing figure of 58 per cent. The above differences are rather difficult to explain.

As far as the writer can ascertain the greater part of the work on conjugal tuberculosis has been carried out with regard to "infection" rather than with regard to "death" of the partner. It is his opinion this is not the most satisfactory method of attacking the problem, as it leaves too much to the personal equation of the observer. What one clinician may consider a case of early infection may be rejected by another as not showing sufficient symptoms or physical signs to warrant a diagnosis of pulmonary tuberculosis. In the writer's opinion the most accurate information regarding the amount of phthisis amongst both married and single is to be obtained from death certificates, for in the closing phases of the disease the chance of error in diagnosis is reduced to a minimum, and for this inquiry death certificates alone have been used. The writer has investigated the 1242 deaths from phthisis which occurred in the borough of Northampton during the ten-year period 1911–20, with a view to ascertaining the frequency of conjugal tuberculosis, as compared with the findings of other observers—i.e., the frequency of death from phthisis of the spouse of a tuberculous person.

Historical Outline.

Dr. Tillische,[5] of the Grefsen Sanatorium, Norway, published in 1914 the result of his inquiries into the previous history of 841 patients, with a view to

ascertaining in what per cent. of them clinical tuberculosis had existed in childhood. He found evidence of it in 156 cases, or 18·5 per cent. This figure agrees with the figure Dr. Harbitz arrived at during his work as a pathologist. Dr. Sophie Tillische[6] gave in *Tubercle* the result of her own investigations during the ten-year period 1911–20, the period embraced by the writer's examination into the deaths which occurred in the borough of Northampton certified as being due to pulmonary tuberculosis. Amongst the 3151 sanatorium patients examined by Dr. Tillische 1152 were married, and of these 85, or 7·4 per cent., were found whose consorts were also tuberculous. Thirteen of these 85 cases are excluded as being too doubtful to include amongst those of undoubted conjugal origin. There remained 72 cases, or 6·2 per cent. of the total, in which "tuberculosis can in all probability be assumed to have been conveyed from one partner to the other." Even in this group there are isolated cases not above suspicion—i.e., with a history of tuberculosis in the inner family circle. If these figures be accepted it shows that marriage with a consumptive does carry with it a certain amount of risk for the healthy partner, that risk being, roughly speaking, doubled. Amongst the 1152 married persons there were 94 widows and widowers. In 44 of these cases, or in 47 per cent., the consorts of these patients had died from tuberculosis.

These observations deal entirely with sanatorium patients, and no mention is made as to the presence or absence of T.B. in the sputum. Much stress cannot be laid on the information gleaned as to the presence of tuberculosis in both parents, which is usually very unreliable, and to be of any statistical value requires to be supported by written evidence.

Arnold Minning,[7] of Denver, U.S.A., investigated 1000 successive dispensary cases, of whom 502 were married, classifying none as tuberculous which were in the least doubtful. His conclusions are as follows: 1. He finds the incidence of marital tuberculosis to be 8·76 per cent., and when a consort dies the mate has been infected in 50 per cent. of cases. 2. There is such a thing as adult infection, and we should constantly bear this in mind in our advice to the layman. 3. It is evident that when there is a continued massive infection over a period of years, and especially when the consort dies (in these last years patients are especially careless and slovenly), there is not only a possibility of contagion, but in one out of every two cases active tuberculosis supervenes. 4. These investigations covered only dispensary cases. In private practice the incidence of marital infection is smaller, proving that intelligent prophylaxis is worth while.

Dr. Harry Lee Barnes,[8] of Wallum Lake, Rhode Island, gives in the *American Review of Tuberculosis* his experiences of 2262 married persons admitted to the Rhode Island State Sanatorium between Nov. 1st, 1905, and May 5th, 1921. Of these 62, or 2·7 per cent., claimed to have partners suffering from pulmonary tuberculosis. Barnes rightly states that statistics based on patients who have had consorts die from tuberculosis are more valuable, not only because plenty of time may elapse for the development of the disease, but also because death is something definite. Patients' statements that their consorts died from consumption, like the physicians' certificates on which they are usually based, are subject to occasional error, yet they probably minimise rather than exaggerate the number of cases of tuberculosis. Barnes draws two conclusions from his investigations: 1. The histories of 229 consecutive widowed patients admitted show that 40 per cent. lost their consorts from tuberculosis, a tuberculosis mortality over three times as great as that of the married people of the community. 2. Immunity from many diseases is short lived, and until much more convincing evidence of permanent immunity against tuberculosis conferred by infection during childhood is forthcoming, a cautious logic will not accept the confident statements that are being made as to the impossibility or rarity of adult infection.

Burney Yeo[9] collected records of 1055 cases of consumption which came under his notice in hospital. Of this number 621 were males and 434 were females. Of the males, 306 were married, 297 were single, and 18 were widowers. Of the 18 widowers only two, or about 11 per cent., could state positively they had lost their wives by consumption. Of the 434 females, 199 were married, 206 were single, and 29 were widows. Only five, or 17 per cent., were able to state positively that their husbands died from tuberculosis. In the writer's opinion these figures, whilst interesting, are not very reliable from a statistical point of view, representing only the statements of patients, and taking no account of other sources of infection or tuberculosis in the inner family circle.

Among 159 couples in which one of the partners was tuberculous, Brehmer[10] found that in 19 cases, or 12 per cent., both suffered from the same disease. Brehmer was dealing with "infection," not with "death," and much depends upon what evidence he based his findings. Haupt,[11] on investigating 417 cases, found 22 instances, or 5·2 per cent., in which both partners were affected by tuberculosis. Here, again, it is a question of "infection," not of "death." Cornet[12] found amongst 594 couples both partners were tuberculous in 23 per cent. of the instances. The same criticism may be offered as in Haupt's cases. Jacob and Pannwitz[13] collected information from a number of German sanatoriums, and found conjugal tuberculosis present in 8·57 per cent. of the cases. Weinberg[14] found amongst 1426 husbands of tuberculous wives that 118, or 8·3 per cent., died from tuberculosis, and amongst 2506 wives of tuberculous husbands 112, or 4·5 per cent., succumbed to the disease, or amongst 3932 consorts of tuberculous persons 230, or 5·9 per cent., died from tuberculosis. He finds the mortality from phthisis amongst those married to consumptives is about double that observed in the general population. It will be noted that Weinberg's observations embrace a large number of cases, and deal with death, not merely with infection. Ludwig Levi[15] investigated 317 married couples who lived in poverty and want; 34 shared the same bed. This group is one in which marital infection might be expected to reach its maximum, but he only found 2¾ of the disease was due to marital infection. Another study was made by Crouch,[16] of the Modern Woodmen Sanatorium, Colorado Springs, U.S.A., embracing 2771 married men and 233 widowers. Out of these 193, or 6·4 per cent., had wives who either showed a history of tuberculosis or who died from it. When he took the widowers he found that 136, or 58 per cent., lost their wives from tuberculosis. He concludes that 58 per cent. of tuberculosis amongst 233 widowers is more than a coincidence. The writer agrees that such a figure, if a correct one, points to more than a coincidence, but he would like to see the patients' statements supported by death certificates before accepting them.

More Recent Studies.

Dr. Paul Roussel,[17] assistant physician to the Sanatorium des Pins and the Villemin Dispensary at Nancy, has recently published a memoir on the subject. At the dispensary he found both husband and wife were tuberculous in 11·6 per cent. of 423 families investigated, and 25 per cent. of tubercle amongst the children of these families. These figures led him to conclude that in 11·6 per cent. of open pulmonary tuberculosis marital infection had occurred, and 37·5 per cent. of the children were affected. If *all* cases were included, the percentage of conjugal infection dropped to 5·2 per cent., and the infection rate for the children to 25 per cent. Dr. Roussel also makes the interesting observation that, as a rule, conjugal infection is milder than other infections, especially those of children, the difference being explained by a sur-infection in one case and a primo-infection in the other. An infection frequently repeated at short intervals seems to be the most dangerous. The danger of repeated infections at

short intervals is what one would expect. The dose is repeated before the protective mechanism is properly established—i.e., during the negative phase, when for a time immunity is actually lowered.

One of the most recent and interesting communications on the frequency of conjugal tuberculosis was published by Dr. E. Ward [18] in THE LANCET. After examining a large number of contacts Dr. Ward finds himself in marked disagreement with the generally accepted view that conjugal infection rarely if ever occurs, and his figures are of such a nature as to rule out the theory of assortive mating, or mere coincidence. He believes the important factor in the spread of tuberculosis is direct infection, not predisposition. In other words, it is the sowing of the seed, not its falling upon suitable ground which leads to fresh cases of the disease—i.e., to its spread. His figures are shown in tabular form.

Table showing the Result of Dr. Ward's Observations on Conjugal Tuberculosis.

—	Number exam.	Tub.	Suspect.	Negative.	Percentages. Tub.	Suspect.	Negative.
Husbands: Wives first notified ..	120	66	12	42	55	10	35
Wives: Husbands first notified ..	36	25	4	7	69	11	20
Totals	156	91	16	49	58	10	32

It is Dr. Ward's opinion that the majority of the spouses of tuberculous husbands and wives sooner or later show signs or symptoms of tuberculosis. He makes a further interesting and far-reaching statement in which he says that not only do they develop consumption, but the great majority recover and make a speedier recovery than do tuberculous patients whose disease is not due to conjugal origin. This, he thinks, may be owing to an acquired immunity due to repeated infections by graduated doses of bacilli. He thinks the subject of conjugal or marital infection should be reconsidered in the light of recent findings, as upon a correct view of the subject, involving as it does the whole question of childhood or adult infection, depends the success of the present and future campaigns against tuberculosis.

Arent De Besche [19] and Jorgen Jorgensen have recently investigated this subject, using the statistical material of the City Board of Health of Kristiania. They found that in 11 cases (1·48 per cent.) it may be assumed that life in wedlock with a person suffering from infectious tuberculosis had been the prime factor in the development of their own tuberculosis. The authors conclude that a slight tuberculous infection during childhood very probably offers a considerable protection against tuberculosis in later life, the immunity thus acquired being, however, only relative, so that exogen infection during adult life will always be of some importance in the ætiology of tuberculosis. There is some risk connected with life in wedlock with an individual suffering from open infectious pulmonary tuberculosis.

The late Ernest G. Pope,[20] of the Adirondack Cottage Sanatorium, Saranac Lake, N.Y., was at the time of his death engaged on the problem of conjugal tuberculosis. The work has been completed and edited by Dr. Karl Pearson. As a result of investigation by modern statistical methods Pope arrived at the following conclusions: 1. It is possible that there is some sensible but slight infection between married couples. 2. That this is largely obscured or forestalled by infection from outside sources. 3. That liability to the infection depends upon the presence of the necessary diathesis. 4. That assortive mating probably accounts for at least two-thirds and infective action for not more than one-third of the whole correlation observed in these cases.

Ætiology and Pathogenesis.

When one considers the apparent facility for infection of the sound partner where the other is suffering from open phthisis the most remarkable feature of the problem is the number who escape, or at least do not die from the disease. It may be taken for granted that phthisis is infectious, and whether a mixed infection plays a large or small part in bringing about the fatal end, there is no doubt that the tubercle bacillus is the causative organism, and it is by repeated doses of this organism that the disease is produced. It is familiar to all that cough is generally a prominent feature of the disease, and it is chiefly by means of the cough that the source of infection is spread around the patient; the more violent the cough, the more widely is the infection scattered by the droplets of saliva and sputum thrown in the air with the paroxysm of coughing, especially as so few patients take the precaution of shielding the mouth with a handkerchief, &c. When we remember that the sound partner passes a large part of the day and often the whole night in close proximity to the sick one, it is difficult to see how he or she escapes.

The writer is convinced the risk of infection is slight even in those cases in which practically no precautions are taken to guard against it. The explanation is that by the time men and women have reached the marriageable age they have passed the age of greatest susceptibility, which the writer believes is during childhood. In no other way can he account for the few deaths of the partners of tuberculous persons where so many factors which would lower resistance and favour the onset are present, especially amongst the working class—e.g., anxiety, want of rest, and frequently want of food.

While some workers, Roussel and Ward, believe the most important factor in the production of marital infection is the sowing of the seed, Pope finds that two-thirds of the infection is due to the seed falling upon a suitable soil—i.e., to the tuberculous diathesis. That there is such a predisposition or diathesis is apparent from the number of persons of the same families included in the 1242 deaths investigated by the writer, viz.:—

	Instances.	
Brothers	33	.. Three families each lost three brothers.
Sisters	22	.. Four families each lost three sisters.
Father and son	13	.. Including one father and two sons.
Father and daughter ..	14	.. Includes three instances of father and two daughters and father, son, and three daughters.
Mother and son	7	.. In one instance, mother, son, his wife and child.
Mother and daughter ..	8	
Brother and sister ..	30	

The Northampton Figures.

When we come to consider the figures for the Borough of Northampton we find that 1242 deaths from phthisis were certified by medical practitioners during the ten-year period 1911–20, and when we examine the marital state of these 1242 persons we find them divided as follows: Married, 525; single, 562; widowed, 49; state unknown, 106. Amongst this number we only find 15 instances where both partners have been certified as having died from phthisis within the decennium under consideration, and from these 15 it is necessary to reject one couple owing to a history of tuberculosis in the inner family circle, rendering the source of infection too doubtful to be included amongst the cases of genuine marital infection. Out of the 1242 deaths from phthisis in Northampton in ten years, we can only find 14 couples of whom it may be said that one partner probably infected the other. As the number of deaths of married persons was 525, the 14 accepted cases give a figure of 2·7 per cent. There are several other instances where married couples have died from phthisis; but one of the spouses has died outside the ten-year period under consideration. If by extending the period under review these had been included, we would, of course, have obtained a larger number, but the total deaths from phthisis would also have been

greater, and I see no reason for believing the percentage figure for married couples would have been increased.

Others who have made a study of marital tuberculosis with the percentages of contagiousness they have found in their investigations are given herewith. Elasser, 39 per cent.; Gebser, 5 per cent.; Joussert, 3 per cent.; Thom, 3 per cent.; Arent De Besche and Jorgen Jorgensen, 1·48 per cent.; Turban, 6 per cent.; Ludwig Levy, 2·8 per cent.; Ward, 58 per cent. It will be noticed there is a marked difference in the findings of these investigators, ranging from less than 1·5 per cent. to the astonishing figure of 58 per cent., but it must be remembered some of these workers dealt only with infection, a very doubtful quantity varying with the personal equation of the observer, whilst the figures for Northampton deal solely with deaths where errors of diagnosis are surely reduced to a minimum. Now, the figure 2·7 per cent. for the amount of contagiousness amongst the married couples in Northampton varies little from the generally accepted figure for the clinical tuberculosis rate for the general population.

Amongst the 14 accepted cases the husband was notified first in eight instances, and in the remaining six the wife was notified before the husband. The average period between notification of the husband and wife when the husband was notified first was approximately 25 months, but when the wife was notified before the husband it was 32 months.

Summary and Conclusions.

My investigations lead me to the following conclusions:—

1. Conjugal tuberculosis is rare.

2. The death-rate from phthisis of the spouses of tuberculous persons varies little from that for the general population of a corresponding age. The phthisis death-rate for Northampton 1911–20 was 1·4. For England and Wales during the same period it was 1·1.

3. Ideal conditions for infection exist, but infection rarely occurs owing to the age of greatest susceptibility having passed by the time the marriage age is reached.

4. My findings support the view that infection usually occurs during childhood, hence the advisability of protecting children whose parents are suffering from open phthisis. Upon these lines the Grancher system is founded, and is being worked successfully in France.

5. When conjugal infection does occur the disease usually runs a relatively short course.

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THE PREVENTION OF STILL-BIRTH.

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IN papers dealing with obstetrical difficulties it is usual for the claims of the mother to be considered almost to the exclusion of those of the fœtus. While it is agreed that, in cases of danger to life, there should be no hesitation in sacrificing the fœtus in the interests of the mother, it appeared to the writer that it would not be out of place to consider the means most suitable for saving the life of the fœtus in cases where it might be in danger.

Causes of Still-birth.

Before considering the means of preventing still-birth, it is advisable to glance, for a moment, at its causes. Prenatal fœtal death is brought about usually by some condition which interferes with the placental circulation. The most common of these conditions are syphilis, toxæmia of pregnancy, nephritis, eclampsia, and retro-placental hæmorrhage. In such cases, if the dead fœtus is not expelled at once, it will be more or less macerated when born, and the placenta will probably show hæmorrhages or infarctions or, in syphilitic cases, will be large and pale. Intranatal death occurs during the course of labour and is usually due to fœtal injury. The strain causing the injury falls mainly on the cranium, and the effect is, by compression of the head antero-posteriorly, to cause such vertical elongation that the tentorium is pulled on and is torn near its attachment to the falx, with hæmorrhage (Eardley Holland). In other cases intra-cerebral hæmorrhage occurs, sometimes, and especially in premature fœtuses, into the ventricles. Hæmorrhages, in some cases accompanied by rupture, are occasionally seen in the liver and suprarenals—less commonly in the other organs; rarely these hæmorrhages may be brought about by forcible pressure, more often they are due to vascular back pressure associated with asphyxia. Neonatal death, which occurs during the first few weeks of life, is often due to some cause acting during labour, e.g., dystocia, or even before the onset of labour such as syphilis, and it has to be considered along with the foregoing conditions.

Signs of Fœtal Distress.

The signs of fœtal distress *during labour* are slowing or quickening of the fœtal heart, the appearance of meconium when the presentation is other than breech, or the formation of a large caput. *After birth* the signs of distress are mainly respiratory. Thus the child may never breathe, and yet the heart beat for half an hour or more; again, respiration may be established but not satisfactorily, and fail in a few hours. In this class of case some intracranial injury is usually found. In a third type of case respiration may be apparently satisfactorily established and then fail gradually or even suddenly in a day or two, and in these cases hæmorrhagic pneumonia is often found post mortem.

Antenatal Examination and Care.

By proper antenatal examination much may be learned and efficient treatment established. From the *physical aspect* contracted pelvis, post-maturity, and malpresentation of the fœtus are the most important points to be guarded against. Early in pregnancy a full pelvic examination should be made, and the external and internal measurements carefully noted. This should include a careful measurement of the diameters of the pelvic outlet as in a number of cases unsuspected contraction may be present here, and may be the cause of complete perineal laceration (Blair Bell), the head having to pass entirely behind the ischial tuberosities. At the thirty-sixth and again, if necessary, at the thirty-eighth week the relationship

between the fœtal head and maternal pelvis should be ascertained; this is done most accurately by the Munro Kerr method. If the disproportion be such that it is thought impossible for the head to come through the pelvis, Cæsarean section can be arranged for about term; if the disproportion be only slight, the patient or her friends should be warned that labour is likely to be prolonged and that instruments may be required. If the disproportion be of a medium degree, the best line of treatment is to induce premature labour just when the head can be engaged in the pelvis with slight difficulty, as estimated by the Munro Kerr method. It is of little avail to induce before the thirty-sixth week, as the chances of the child surviving are but slight: the later in pregnancy it can be delayed the better the outlook for the child. A breech presentation should be left alone until the eighth month when external cephalic version should be performed. Often anæsthesia is required for the satisfactory performance of this operation, and the head should then be pushed well down into the pelvis and an attempt made to keep the fœtus in its new position by applying a thick pad on each side of the head on the lower abdomen and fixing a tight binder round. If performed before the eighth month the malposition is likely to reappear as the fœtus is then liable to float round in the relatively abundant liquor amnii. In the rare cases where a face presentation is diagnosed before labour a determined attempt should be made by manipulation to flex the head and convert it into a vertex. If an occipito-posterior position be found it is an open question whether anything should be done at this stage. The great majority of these cases undergo long rotation spontaneously so that the occiput comes to lie anteriorly during labour. Before the onset of labour the best method of treatment is the two-towel method of Buist. The late J. W. Ballantyne reported considerable success with this manœuvre of prophylactic rectification and also with prophylactic version in breech cases. Post-maturity, accompanied as it is by enlargement and excessive ossification of the fœtal head, constitutes a grave risk to fœtal life in the same way as contracted pelvis. When the date of parturition has been carefully determined from the date of the last menses and of quickening, pregnancy should not be allowed to go on beyond 48 hours of that date in a primigravida or seven days in a multipara. Labour is most easily induced in these cases by the castor oil, quinine, and pituitary method of B. P. Watson, who records 95 per cent. of successes. Only rarely does a bougie require to be introduced, and then under strictly aseptic conditions.

Certain *toxæmic states* may also be diagnosed and treated during pregnancy. Syphilis in the mother during pregnancy should be treated as soon as diagnosed, irrespective of the period of gestation. Adams recommends intravenous injections of 20 cg. galyl, or a proportionate dose of novarsenobillon, increasing the dose to 30 cg. Intramuscular injections of mercury gr. 1 in emulsion are given at the same time. At birth a specimen of fœtal blood should be taken from the umbilical cord and a Wassermann test performed, and this test is to be repeated at six-weekly intervals on blood pricked from the heel.

Treatment of the infant is begun during the first week and consists of intramuscular injections of galyl, 2 cg. in glucose, repeated fortnightly, the dose being increased in time to 5 cg. Mercury gr. ¼ should be injected into the buttock and repeated weekly and, when two or three weeks old, hydrarg. c. cret., gr. ½, is given daily by the mouth. This treatment is to be continued until the Wassermann is negative, and is to be repeated if it subsequently again becomes positive. In the toxæmias of pregnancy treatment should be started when albuminuria is first noticed. If the patient comes under treatment only when the condition is advanced, the fœtus has probably already perished. Hence the important point is to get the patient under treatment early, and this can be done only if the urine and the general condition are examined at monthly intervals during pregnancy, and if she be told to report at once on the occurrence of headache, sickness, œdema, interference with vision, or hæmorrhage. She should at once be put to bed between blankets and surrounded by hot-water bottles; this diminishes metabolism and produces diaphoresis. The diet should be cut down relentlessly and if necessary reduced to water and imperial drink, milk being added later, and then fish, chicken, and meat as the condition improves. Eggs are to be prohibited throughout pregnancy. Magnesium sulphate should be given as required; it not only clears out the bowel, but also removes a large amount of toxin-laden fluid, and is very valuable in this respect. The action of the skin will usually be sufficiently stimulated by the blanket, hot-water bottles, and imperial drink. It is to be repeated, however, that fœtal life can be saved only if the case be treated in an early stage and if the patient be put under rigid supervision for the remainder of pregnancy. It is in cases of this nature that antenatal observation and treatment reach a high sphere of usefulness.

Prevention of Fœtal Death during Labour.

During labour much may be done to conserve fœtal life. While antenatal care and treatment are of the first importance in this respect, there is rather a tendency at present to forget that the most efficient antenatal observation and treatment will fail unless followed by equally efficient treatment during parturition. In this connexion Eardley Holland found that 60 per cent. of still-born fœtuses died *during* labour, while in a series of cases examined by the writer it was found that 71 per cent. had died under similar conditions.

During labour the factors to be considered are almost entirely mechanical and resolve themselves into two groups: (1) where there is some disproportion between the maternal bony pelvis and the fœtal head, and (2) where some fœtal malpresentation exists.

1. If the disproportion be extreme, as with a severely contracted pelvis, Cæsarean section should be performed if the patient be early in labour and if the conditions as regards sepsis are satisfactory. If the disproportion be only slight, probably forceps will be successful. But they should be applied only after sufficient time has been given for the head to mould to the maximum, and they are to be pulled on as gently as possible and screwed together just tightly enough to grip the head. If haste be avoided a fair proportion of these cases will be born spontaneously, and while it must be admitted that there is a definite risk to fœtal life in a prolonged labour terminated spontaneously, such risk is considerably increased by the application of forceps. Where the disproportion is moderate the difficulty is greatest, and in this class of case the widest choice of method—pubiotomy, forceps, Cæsarean section, and even symphysiotomy—is offered. Looking at the matter from the point of view of fœtal life, the best methods of delivery are the induction of premature labour under the conditions previously mentioned, Cæsarean section or pubiotomy, but for any of these to be of the fullest benefit the patient should have been under antenatal observation. It is of the first importance to see such a case as early as possible in labour. If seen early and before much examination and with the membranes intact Cæsarean section may be performed with safety to mother and child, while if she has been in labour several days it may be that craniotomy will be the only possible treatment.

2. In occipito-posterior presentations plenty of time is to be given, as we know that spontaneous long rotation occurs in the majority of these cases, and it is only when the posterior position is persistent that treatment is indicated. It must be remembered that turning the head alone is bound to fail, as this results merely in the twisting of the neck, and when the hand is removed the head slips back at once. Two methods are available: in one the head is rotated through a quarter or half a circle with the fingers of one hand

in the vagina, while the other hand grasps the anterior shoulder through the abdominal wall and rotates it in the same direction at the same time. The other method, devised by the late Lamond Lackie, consists of displacing the presenting part and inserting two fingers along one side of the head and behind the anterior shoulder, which is then rotated, usually easily, through a quarter or half a circle. The head usually follows easily and remains in its anterior position. Labour may then be allowed to go on spontaneously or be terminated by forceps delivery. Breech presentations, when seen first in labour, present many difficulties. The high proportion of still-births in these cases is brought about not so much by prolapse of the cord and pressure on the placenta, or even by premature efforts at inspiration, as by the pressure of the maternal soft parts on the after-coming fœtal head causing tentorial laceration and hæmorrhage as described above.

The points to be emphasised in the conduct of a breech case are (1) to keep up flexion of the head; (2) to avoid haste in delivery; and (3) to keep the exposed parts covered with a warm towel. Flexion is maintained best of all by suprapubic pressure, and this should never be relaxed after the buttocks are born. The best way to produce extension of head or arms or both is to pull on the legs in an attempt to complete delivery rapidly. Again, should the after-coming head be held up, it is justifiable to wait up to 20 minutes (Holland) for delivery rather than to deliver by one of the grips. During this period it is very necessary to ensure that the parts of the fœtus already born are covered by warm towels to prevent premature respiration. Only with this precaution attended to is it justifiable to wait longer than the few minutes usually recommended. Thus any delay in the birth of the after-coming head places us in a dilemma. If birth be hastened, intracranial injury is likely to be caused, and if an expectant attitude be adopted, premature inspiration may cause the fœtal air passages to become filled with vaginal mucus.

Probably a middle course is the best. The head is not to be rapidly extracted for fear of causing intracranial trauma, but up to 15 minutes may be allowed for spontaneous expulsion with firm suprapubic pressure. After that period the interference with placental circulation is likely of itself to stimulate respiration in the fœtus, and further delay should not be allowed. This is obviously a point of prime importance, and necessitates a considerable alteration in our ideas regarding the management of breech cases. Since rapid extraction of the after-coming head predisposes strongly to the production of tentorial laceration and hæmorrhage, the teaching in most of the text-books recommending extraction within a few minutes of the birth of the breech would appear to require modification in the direction indicated.

Ante-partum hæmorrhage and eclampsia are frequently associated with still-birth, but in these conditions the risk to the mother is so great that it does not appear justifiable to consider any measures except those in the maternal interest.

Asphyxia is the clinical condition usually associated with still-birth, and it is appropriate to consider here the effect of artificial respiration. Blue asphyxia is mostly due to lack of blood aeration, and seldom fails to respond to clearing of the air passages and gentle artificial respiration. White asphyxia is usually associated with cerebral injury due to intracranial hæmorrhage, and, with the best intentions, energetic artificial respiration is apt to be practised, especially if the heart is still beating. It is evident from what has been said that the only effect of such manipulation will be to tend to a further increase of the hæmorrhage, and so the last chance of life may be lost. In these cases, after clearing the air-passages, the fœtus should be wrapped up warmly and left absolutely at rest.

While the claims of the fœtus have been the primary consideration in this communication, in no case have the interests of the mother been prejudiced by any procedure recommended. Indeed, it can be said in general that what has been urged for the benefit of the fœtus is also for the benefit of the mother.

It is estimated that, on account of congenital defect, ante-partum hæmorrhage and similar conditions, 1 per cent. of still-birth is unavoidable. This is probably correct, and our duty lies in attempting, by all the means at our disposal, to prevent the occurrence of still-births in any individual case in which it is preventable.

FEMORAL HERNIA.

OPERATIVE TREATMENT BY ROUX'S METHOD.

BY FRANK HARVEY, F.R.C.S. EDIN.

THE radical cure of femoral hernia presents considerably more difficulties than that of the inguinal variety, owing to the difficulty in closing the crural canal satisfactorily. This is due to: (1) The rigidity of the internal and inferior boundaries of the crural canal, (2) the presence of the femoral vessels on the outer side of the canal. The question of whether femoral herniæ are congenital is disputed.

Sir Arthur Keith,[1] in his Mitchell Banks lecture on Nov. 1st, 1923, states that "at no point of the development of man or beast does an invagination of the peritoneum take place at the femoral ring." Hamilton Russell [2] (Melbourne) in 1902 and again in 1923,[2] propounded the saccular theory of hernia. He states that R. W. Murray [3] examined 100 bodies and found sacs in surprising numbers. My experience tends to prove that femoral hernia is not of congenital origin.

My series show 51 cases of adults, and only one in a child 5 years of age. These cases have all reported within a period of three months after the appearance of the swelling. This is contrary to my experience in inguinal herniæ where a large proportion of cases are known to have existed since birth.

Femoral hernia occurs more frequently, according to statistics, in women than in men, and rarely in children. Here my series of cases is in contradiction to the above statement, men having formed 28 of the cases and women 24. This variation may be explained by the fact that these men were engaged in heavy manual labour.

A great many varieties of operation have been devised for the radical cure of femoral hernia, but having tried many of the methods devised I have found that the results given by Roux's operation are by far the most satisfactory.

Fifty-two Cases of Roux's Operation.

In my series of 52 cases in which Roux's operation was performed, covering a period of 15 years (1905–20), 28 were males and 24 females. The youngest patient was a girl aged 5 and the oldest a woman aged 72. Forty-six cases have been traced and have replied stating that the hernia has not recurred, and pain is not complained of.

Technique of the Operation.

Roux's operation is a very simple one and is quickly performed. An incision is made parallel to the inner half of Poupart's ligament and along its lower border. The lower part of the incision is retracted so that the femoral canal is exposed. The sac is defined and opened. Omentum is often present and will usually be found to be adherent. All adhesions are freed, and it is frequently necessary to ligature and remove redundant omentum before returning it to the peritoneal cavity. Bowel, if

[1] Sir Arthur Keith: Brit. Jour. Surg., 1924, i., 469.
[2] R. Hamilton Russell: THE LANCET, 1902, i., 1519; Brit. Jour. Surg., 1923, xi., 150.
[3] R. W. Murray: THE LANCET, 1906, i., 363.

present, is carefully examined where it has been in contact with the neck of the sac before it is returned into the abdominal cavity. The sac is pulled down with moderate tension, twisted to obliterate its lumen, and ligatured high up, the redundant portion being excised. A rectangular staple, which is made in various sizes, is now taken, and the points passed through the inner portion of Poupart's ligament. The inner limb of the staple passes just internal to the crescentic border of Gimbernat's ligament and the outer limb immediately internal to the common femoral vein. The staple is pressed firmly into the horizontal ramus of the pubic bone.

Roux's punch is now placed on the staple, which is gently hammered into the bone until the crural ring is obliterated. Care must be taken not to drive the staple in too tightly, or Poupart's ligament will be torn. The external wound is then closed with silkworm-gut sutures. Roux's punch is 5 inches long and has a groove in its lower end into which the staple loosely fits. Of the 46 cases, which I have traced, one (No. 38) recurred in six months. I removed the staple, and introduced a fresh one. There has been no recurrence, the patient having since worked as a coal-miner.

Conclusions.

I consider the following conclusions can be drawn from my experience of these 52 cases.

1. That Roux's operation is a simple and efficient one, and can be performed more quickly than any other operation for femoral hernia.

2. That the staple does not tend, in my experience, to become loose, and does not give rise to pain.

3. That right femoral hernia is more common than left. In my series of 52 cases, 37 were on the right and only 15 on the left side.

4. That the commonest type of femoral hernia is an epiplocele.

Queen Anne-street, W.

Clinical and Laboratory Notes.

AVULSION OF THE ANTERIOR SUPERIOR ILIAC SPINE TREATED BY OPERATION.

BY A. G. ORD, F.R.C.S. EDIN.,

HON. ASSISTANT SURGEON, ROYAL PORTSMOUTH HOSPITAL.

THE cases of this injury here recorded are somewhat uncommon. Operative measures appear to offer by far the best hope of an early return to full activity and are, I think, quite justified in view of the surprising amount of disability the injury causes.

A boy of 17 was admitted with a history of limping and pain in the right thigh following on kicking a football hard with his right foot, and swinging round on his left leg.

Condition on Examination.—It was observed that there was some swelling but little bruising in the region of the anterior superior iliac spine. The limb lay in a position of slight flexion and internal rotation. There was no true shortening, and only slight limitation of voluntary movement at the right hip-joint in the directions of extension and external rotation. About 1 inch to 1½ inches below the iliac crest a lump about the size of a Kentish cob-nut could be felt, which was movable. Crepitus was easily elicited. A diagnosis of avulsion of the anterior superior iliac spine was made and confirmed by X rays.

Operation.—A U-shaped skin-flap was made of some 3 square inches in area over the swelling, and the fascia lata split longitudinally. The bony fragment was mobilised and approximated to the ilium by flexing the thigh. The periosteum was sewn together with catgut, and a doubly transfixed ligature of the same material around the whole gave additional security. The wound was closed in layers in the usual manner.

The patient was returned to bed with his thigh flexed, and it was only gradually extended, so that a position of full extension was obtained only on the ninth day, when the stitches were removed and the patient discharged. He was instructed to walk as much as he liked, but not run or kick. He came back to report in nine days, when firm union appeared to be established, and he was permitted to resume football, &c., and has had no further trouble.

Precisely similar details are found in another case of a boy of 17, but he was left-footed, and the injury was transposed to the opposite side. The same result was obtained by the same methods and in the same time. Subsequently, however, a case came to my notice which I have no doubt was originally one of avulsion of the iliac spine, which had been treated by strapping and recumbency. Although it was some seven or eight weeks after the injury when I first saw the case, yet there was still sufficient pain on extension and external rotation to prevent the boy recommencing his football activities. There was a mass the size of a hen's egg in the region of the spine, indicating excessive callus formation. It is certainly doubtful if he will play again this year, for the callus is soft, and may possibly be pressing on nerves.

It is a little difficult to explain the exact mechanism of the above injury. It would seem to be due to over-action of the sartorius when the thigh is semiflexed, adducted, and internally rotated, although it is surprising that such a comparatively weak muscle should be able to separate the epiphysis in this manner. Certainly the exact similitude of all three histories and the total absence of any direct injury support this hypothesis, but there must be other factors, for otherwise the injury would surely be a great deal more common.

TWO CASES OF SARCOMA IN CHILDREN.

BY D. R. BLUNN, M.R.C.S. ENG.,

SENIOR HOUSE SURGEON, WALTHAMSTOW, WANSTEAD AND LEYTON CHILDREN'S AND GENERAL HOSPITAL, E.

THE following two cases of sarcoma seen in this hospital may be of interest:—

CASE 1.—A mother brought her boy, aged 4½, to hospital in March, 1924, saying that she had noticed discharge from his left ear for the last 12 months. He never complained of pain. Two polypi were found in the ear and removed with a snare. Peroxide drops and boric lotion were given for the treatment of the otitis media. The child did not come up again until the following June. On examination he was then found to be suffering from acute mastoiditis.

Operation.—The middle ear, antrum, and upper portion of the mastoid were found to contain pus and a polypoid fleshy mass, the whole of which was removed together with surrounding bone. On section the neoplasm proved to be a myxosarcoma. Radium treatment was given over a period of a week. Five weeks later a small swelling appeared below the site of operation, and gradually increased in size. The child showed signs of increased intracranial pressure. As the tumour increased, the lower jaw was pushed towards the opposite side and the left eye destroyed. The child died in October, with a tumour half the size of his head. It was not possible to obtain a post-mortem examination.

CASE 2.—A girl, aged 8, was sent in by the school authorities. The child said she had knocked her left cheek on the desk at school three weeks before. After this a small swelling appeared on the cheek and gradually increased in size. On examination a hard rounded swelling about 1¼ inches in diameter was found attached to the left malar bone immediately below the infra-orbital margin. The skin was freely movable over the swelling, but there was a mucocele caused by pressure on the lacrymal duct.

Operation.—A very vascular tumour was removed, and this proved to be an osteosarcoma on section.

Although a small swelling has recurred, radium treatment appears to be checking advance of the growth, as it is now six months since the operation.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY.

A MEETING of this section was held on Dec. 3rd, under the presidency of Mr. HERBERT J. PATERSON.

Diagnosis of Malignant Disease of the Thyroid Gland.

Mr. JAMES BERRY initiated a discussion on this subject. He intimated his intention to deal with it in a general way, chiefly from the clinical aspect, relating cases which were chosen because of the difficulties in diagnosis which they presented. Fortunately, malignant disease of the thyroid was not a very common occurrence. There were many difficulties in the way of a correct diagnosis of it. Some had allowed a malignant goitre, under the supposition that it was harmless, to grow to a considerable size before seeking medical advice; and in other cases a patient would be treated for months with iodine or with thyroid preparations without the suspicion having been entertained that the condition was other than an ordinary goitre. That was especially likely in districts where goitre was common; the practitioner was so familiar with ordinary goitre that he was apt to overlook the rarer and more serious disease when it occurred. One reason for this was that most malignant thyroid tumours caused no symptoms beyond the discomfort due to a growing lump in the neck. Alterations in health occurred only when the disease had reached an advanced—often an inoperable—stage. Pain, dysphagia, and dysphonia were, usually, quite late accompaniments—namely, after the growth had penetrated the capsule and when it had begun to affect the surrounding structures. These signs and symptoms might occur in the case of tumours of the gland which were not malignant—namely, those of inflammatory nature. In many cases, in the speaker's opinion, it was impossible to arrive at a certain diagnosis before operation. Malignancy might attack a goitrous tumour previously benign.

Thyroid tumours might have a wide area of contact with the trachea, and with the latter the thyroid capsule became quickly incorporated and so restricted movements. He pointed out that malignant goitre could not be moved on the trachea, as could innocent goitre unless definitely inflamed. The thyroid was in close relation with the recurrent laryngeal nerve and with the pharynx, hence the importance of paralysis of the vocal cords and dysphagia. These signs might occur when the tumour was but small if the disease began at the posterior part of the gland. Such cases usually, because of their symptoms, came first to the laryngologist rather than to the general surgeon. The latter saw first the cases in which the disease formed a tumour on the front aspect.

An important factor in the diagnosis was the displacement of the carotid vessels; the malignant disease did not usually displace them to the same extent as did innocent goitre. When the malignant disease began in the anterior part of the gland and the tumour could grow forward, away from the recurrent laryngeal nerve and larynx, the patient was likely to be spared distressing symptoms. For that reason it was possible that the malignant tumour might be allowed to attain a considerable size before medical or surgical advice was sought. In one case of the kind he dealt with, the tumour weighed 16 oz., and six months after the operation the patient died of recurrence of the disease.

The commonest degenerations of ordinary goitres were fibrosis and calcification. The statement had recently been made in America that adenomata of the thyroid having a fibrous star-shaped centre were apt to become malignant, but Mr. Berry definitely dissented from that view. In his own series of 373 cases from which he had removed solid (not cystic) adenomata, only three or four eventually became malignant. These ordinary tumours should not be removed unless there was some definite reason for it, such as the production of pressure symptoms. Both fibrosis and calcification caused the occurrence of hard masses within the goitre, in this way enhancing the diagnostic difficulties already sufficiently great. Clinical histories were very misleading. A calcified thyroid tumour might exist for years without the patient being aware of it, especially if it lay behind the clavicle or the sternum.

The presence of a recently noticed hard lump in the thyroid region in middle age or later should always arouse the suspicion of malignancy, even in the absence of any other sign, though most such hard tumours were not malignant. Careful palpation helped greatly in the differentiation. Hæmorrhage was very common in thyroid tumours, but this was no indication of malignancy; indeed, among many cases of cystic adenoma and others in which bleeding occurred he had never seen any considerable spontaneous hæmorrhage within a malignant thyroid tumour. It was seldom that patients with innocent goitre complained of difficulties in swallowing; even when the pharynx and œsophagus were displaced it rarely was a permanent occurrence. But in malignant disease of this part, when the disease began at the back, dysphagia was often an early and important sign. Error was here also possible, however.

Mr. Berry said one of his main objects in bringing forward the subject was to draw attention again to the class of innocent thyroid swelling, which was frequently mistaken for malignant tumour. In the present day, when operations for thyroid disease were becoming increasingly safe and easy, there was a danger lest severe operations should be needlessly undertaken. He stated very definitely that removal of the whole thyroid gland should never be carried out, even for carcinoma of it. He had himself never done so, nor felt that he ought to have done it. He laid special emphasis on the fact that in the innocent variety of tumour there was nearly always present in the patient a waxy pallor, which indicated commencing atrophy. It was the beginning of what was seen more markedly in advanced myxœdema. This waxy pallor was practically always absent from the patient who had true malignant disease at that early stage before the growth had penetrated the capsule. He had been many times impressed by the apparent general well-being of patients who were suffering from even advanced and extensive malignant disease.

Around the hall were a large number of photographic enlargements of micro-photographs of different varieties of thyroid growth, and for several hours there had been on view many actual specimens from the Royal Free Hospital, which had been arranged by the pathologist to that institution, Dr. G. S. Williamson.

Discussion.

Mr. WILFRED TROTTER said that, to the practical surgeon, the subject divided itself into two groups: (1) The diagnosis of the nature of the condition being dealt with; (2) the diagnosis of the operability of the given tumour. Under the first of these he referred to carcinoma of the cervical œsophagus invading the thyroid gland. This presented a remarkably stable and constant clinical picture, and was very common. In its early stage it was essentially operable, but usually it was met with in a very misleading form. In most cases the first symptom was paralysis of a vocal cord, and the patient would at this stage deny that anything else was wrong. He showed sections illustrating how in a case of the kind the disease had come through from the œsophagus into the thyroid body, enlargement of which was the second symptom in this disease.

With regard to the diagnosis of operability, the task of diagnosis in connexion with malignant disease of the thyroid was not completed with the beginning of the operation. Diagnosis continued throughout the operation, the important matter being whether there was justification for continuing the

operation. In his view malignant disease of the thyroid was not attacked with sufficient enterprise, and minor conditions encountered during the operation should not be too readily accepted as determining the diagnosis of inoperability. A further point in this matter of operability was the question of early recurrence. He had a patient with a papilliferous thyroid, which was operated upon as a benign tumour. Within six weeks recurrence took place, and it was somewhat firmly fixed to the tracheal wall, from which it had to be cut away. For fully ten years there had been no further recurrence. Kocher stated that cases of malignant disease in which the capsule of the thyroid was penetrated and in which glandular involvement occurred were very unfavourable. But the speaker had dealt with a youngish woman in whom there was a string of carcinomatous glands along the neck, and a mass in the right lobe of the thyroid, which at the operation was seen to have penetrated the capsule in several places. That was excised, and a systematic gland operation carried out, and the patient had remained free from recurrence to the present time, a period of 17 years.

Mr. A. J. WALTON said no definite statement could be made which would be applicable to all varieties of thyroid tumour. He did not think a pathological classification was possible. He had had 13 cases which had been diagnosed as carcinoma in a series of 402 patients operated upon, or 3·2 per cent. malignant. If groups of cases seen in the out-patient department were included, the percentage would be reduced to 1·6. In goitrous districts the frequency of malignant disease of this gland was a little less than in non-goitrous regions. Usually it came on at about middle age; his youngest patient was a male aged 21, and his oldest a woman aged 79. Carcinoma might be present secondary to adenoma, and in these cases hyperthyroidism was an early symptom. There might be a cellular overgrowth within the capsule for a long time before the carcinomatous stage was evident. The only safe course was to remove them because of their liability to malignancy. Three symptoms, especially if combined, could be regarded as evidence of malignancy: (1) rapid growth, (2) irregularity of the surface of the tumour, and (3) its hardness. He made an important exception in the case of changes occurring in the gland in the course of pregnancy. No operation for goitre should be done on a pregnant woman unless there was some grave reason for it. Many thyroid changes ceased with the termination of labour. A suspicious sign of early malignancy was a radiating pain passing towards the ear; and stress should also be laid on the adherence of the tumour to the trachea.

Mr. T. P. DUNHILL said that since he came to London from Australia he had operated upon 350 cases of goitre. These could be classed into three groups. In the first of them there was no doubt about the diagnosis when the patient was seen; there were lumps, usually irregular, sometimes involving the skin, sometimes the skin could be moved freely over them in parts. In some parts the tumour could be seen to fade away into surrounding tissues, and there was difficulty in breathing, perhaps in swallowing too, and the voice might be altered. In the face of such cases the surgeon felt helpless. In the second of his groups the nature of the case was not so obvious; the swelling was asymmetrical and less hard than in Group 1. The edges were fairly defined, and the breathing difficulty was greater than would have been suspected. The aid of the radiologist showed masses in the mediastinum. But even when such cases were felt to be malignant the patient should not be given the idea that nothing could be done for him. Sometimes the bulk of the tumour could be removed, and then the patient placed where he could receive skilled deep radio-therapy. In the third group he thought a correct diagnosis could only be arrived at with the aid of the pathologist. Five of his 350 cases had malignant adenomata. He urged a close working association between surgeon and radiologist, and a freer removal of early doubtful tumours, to avoid the risk of allowing a malignant growth in this region to develop unchecked.

Dr. G. W. NICHOLSON entered with some detail into a discussion of the pathology of the kind of cases under consideration. He thought tumours which were malignant in a portion only should be called parathyroid growths, though without implying that they arose in the parathyroid. It was safer to regard them always as malignant. He considered it impossible to diagnose malignant adenomata. He had seen three cases of squamous-celled carcinoma in which the growth probably originated in the thyroid gland. Two had keratinised freely.

Mr. ZACHARY COPE commented on the lack of exact knowledge in regard to the operability of these tumours, except in the case of the obviously hopeless ones, and here knowledge was not of much value. He narrated a case in a boy aged 10, in regard to whom the lump in the right lobe of the thyroid—which was removed—was reported to be "not typically malignant." But there were four recurrences, and the boy died. Surely four recurrences argued a very definite malignancy.

SECTION OF ORTHOPÆDICS.

A MEETING of this section was held on Dec. 2nd, Mr. H. A. T. FAIRBANK, the President, being in the chair.

Mr. P. JENNER VERRALL opened a discussion on

Sacro-iliac Disease.

He said that of the many branches of orthopædic surgery still imperfectly understood, the sacro-iliac joint was not the least important. When one considered that all the weight of the superincumbent body was borne on these joints and that they were all the time subjected to a shearing strain, and that the advantages of a bony ankylosis had been sacrificed to the needs of parturition and the necessity for shock absorption, one might well expect to find frequent disabilities in this region. Whatever the disorder of the joint the same clinical picture was presented—viz., a characteristic stance and gait, designed to spare the affected joint, with a tilting up of the pelvis on the bad side; the gait was especially striking in going upstairs, when the patient very carefully selects a painless position on the bad side, then swiftly swings the good leg on to the next stair and passes the weight to it; this procedure was in marked contrast to the process in hip conditions where the joint is painful in all positions. The history was usually vague, the onset being insidious, unless the pain followed pregnancy or some stooping strain. A very characteristic complaint was that of marked instability, the sensation of "falling to pieces." Since the joint was supplied by all the nerves near it, pain might be referred in many directions; the pain was increased by standing and walking, and especially by any sudden jar and by going upstairs. The condition produced a high degree of neurasthenia, with exaggeration of all symptoms, and in order to make a diagnosis it was necessary for the essential signs to be found. These included swelling, and possible abscess, over the joint, in the abdomen, the buttock, iliacus muscle, and pelvis; deep tenderness over the joint, to be distinguished from superficial tenderness referred from abdominal or pelvic lesions; the latter was usually rather lower down, being conveyed by the third sacral nerve. A conclusive test was the production of pain in the joint by prolonged compression, either of the crests or of the pubes. Hip movements were normal when the knee was flexed, but with an extended knee there was pain when the hamstrings began to tilt the pelvis. There was rigidity in the lumbar spine, but no true psoas spasm. The differential diagnosis must consider, firstly, strains in muscles and ligaments, which were common, and which did not produce the characteristic gait or the feeling of instability; and, secondly, the constant

pitfall of referred pain. X rays did not materially help, as the joint was too tortuous for the antero-posterior view to show minor displacements.

The commonest form of affection was the toxic, due to chill, minor injury, or of insidious onset. Other joints were usually affected at the same time, as also was the case when the gonococcus is the causative organism. Tuberculosis of this joint was rare, severe, and fatal; abscess formation was very common, and might be the first indication of the disease. A condition of undue laxity of the articulation was not uncommon; it might be congenital, but more often followed repeated strain, or parturition. The restoration of this joint proceeded pari passu with the involution of the uterus, and might fail if the upright position was resumed too soon. Abnormal strain was also thrown on the joint by such things as a stiff hip or spine, traumata, or habitual bad stance. The acute case usually resulted from a bending strain, the upper end of the sacrum being forced backwards on the ilia; in chronic cases the sacrum tended to slip downwards and forwards. The treatment was operative, manipulative, or conservative. A severe arthritis demanded long immobilisation, from lumbar spine to hip, in a Thomas frame or plaster, with or without internal splinting. Mr. Verrall demonstrated a case showing excellent results from sliding a bone-graft right across under the erector spinæ from one posterior superior spine to the other; the bone might be taken from the tibia or ilium. The manipulation he preferred was that of full flexion, with subsequent support by some form of brace or elastic corset.

Treatment by Support.

MR. J. B. MENNELL expressed his gratification at finding sacro-iliac disease recognised by this Section; the majority of the cases were seen by physicians and diagnosed as sciatica, lumbago, neuritis, or chronic rheumatism. He showed a number of external supports of the type which he preferred, consisting of a large oblong back plate and a short, broad anterior plate, prolonged so that its ends lay just below the anterior superior spines, with three straps passing round from the front to the back and ending in front again: the highest strap was round the lower ribs, in order to get the top of the back plate above the lordotic curve, the middle one round the lumbar spine, and the third round the ilia. The breadth of the back plate depended on the nature of the strain; if there was forward torsion it was narrow to fit between the posterior superior spines, while the anterior plate pushed the sacrum backwards; if backward torsion was present the back plate was broadened. Referring to the puerperium, he suggested that more danger lay in sitting up in bed with an unsupported lumbar spine than in resuming the erect position too early, and advocated the old maternity binder, from waist to mid-thigh, as a support. He stressed the importance of examining the anterior aspect of the joint, as the sacro-iliac spot was close to McBurney's and confusion was liable to be made between them.

Treatment by Manipulation.

DR. EDGAR CYRIAX maintained that subluxations of this joint were exceedingly common, as shown by a slight asymmetry of the bony points. He treated his cases by the usual method for subluxations—reposition by manipulation, a process which was painless, simple, and effective. Occasionally it required to be repeated, but in most cases one manipulation was sufficient and no after-treatment was required. Out of some 1500 cases he had only had half a dozen failures.

MR. H. B. ROTH described the manipulation he was accustomed to perform: he followed this up by strapping round the pelvis below the anterior superior spines, left on as long and as tightly as the patient could bear. Except in very severe cases requiring prolonged rest or operation, he obtained cure by this method in three to four weeks. He believed that the clinical picture of true sacro-iliac disease always began with sudden strain, never insidiously, and the patient, if asked to point to the site of the pain, would always put his thumb precisely over the joint.

MR. R. C. ELMSLIE commented on the diversity of opinion as to the prognosis of the condition and considered that no real standard of diagnosis had yet been reached. He preferred to keep the term "lower backache," with which everyone was familiar, until a better one was found. There seemed no doubt that of this complaint there were many different causes, and some were cured by manipulation, some by support. He had found the painful spot very variable—over the crest, the erector spinæ, the lumbar or gluteal muscles, the side of the coccyx, &c., that over the sacro-iliac joint being rare. He submitted that there was no proof that the manipulations described had special action on the sacro-iliac joint; they might do many things with the lumbar and gluteal muscles. He quoted a case where a very obstinate pain of this nature had been cured by the processes of operatic dancing. He pointed out a characteristic flattening of the sacrum which accompanied the tilting of the spine.

MR. G. R. GIRDLESTONE described a case of prolonged and serious pain in which the insertion of a wedge-shaped piece of bone in the joint had failed to produce bony union owing to the rarefaction of bone which was practically always found in chronic cases. He had therefore repeated the grafting operation in the sacro-iliac joints combined with an arthrodesis of the symphysis pubis. At the present time there appeared to be commencing union.

THE PRESIDENT said that it was clear that another discussion on this subject would be advantageous in two years' time; many points of operative procedure, such as the exposure of the joint, excision, &c., had not been touched on, and there was no agreement as to what was meant by the term "sacro-iliac disease." The diagnostic sign he found most useful was the production of tenderness in the joint by putting it on the strain by forcible flexion or extension. In treatment the important thing was stabilisation with lateral pressure on the crests, the sacrum being inaccessible to direct pressure.

MR. VERRALL, in replying, pointed out the importance of differentiating from ovarian pain, and maintained that in all true cases there was a tender point over the joint, often in association with other tender points—e.g., over the sacro-sciatic notch—due to pain referred along the nerves.

At the conclusion of the meeting Dr. CYRIAX gave a demonstration of his method of manipulation.

SECTION OF OTOLOGY.

EXHIBITION OF CASES AND SPECIMENS.

A MEETING of this section was held on Dec. 6th, Dr. KERR LOVE, President of the section, being in the chair.

Malignant Disease of the Ear.

MR. SYDNEY SCOTT showed skiagrams of a man, aged 27, who had malignant disease of the ear. About three years ago an epithelioma had been removed from the patient's scalp, glands being at the same time excised from the left side of the neck. There had since been several recurrences. The sections of the growth showed well-marked cell-nest formation, as reported by Mr. C. O. Davies, of Liverpool. The left pinna was now protruding, and an ulcerating mass blocked the meatus. Below the ear was an irregular mass, which adhered to the skin and was fixed. X rays showed that the apex of the mastoid had become absorbed. This appeared to be a secondary malignant growth of cervical lymphatics, with invasion of the auditory meatus and mastoid process.

Mr. W. H. JEWELL related the case of a woman who died of a fungating growth behind the ear. Two years previously a breast was removed on account of carcinoma.

Sir J. DUNDAS-GRANT showed some sections to illustrate the beneficial action of radium on endothelioma which was grafted upon angioma of the middle ear. The radium had produced a great change in the microscopical character, for there was now no sign of tumour cell structure, and there was not now the liability to bleed when touched.

Sir WILLIAM MILLIGAN said no great change should be expected in a squamous-celled growth such as this from the application of radium. It was a different matter in the kind of growth mentioned by Sir James Dundas-Grant, in which there was a fair quantity of fibrous tissue. In such a case as Mr. Scott's he advised surgical removal of the ear and a careful dissection of the lymphatic plexus, followed by diathermy. If, however, radium should be preferred, it should be applied by means of a dense "barrage" of small tubes charged with the salt.

Mr. H. V. FORSTER spoke of a case of epithelioma of the external meatus which he curetted and examined. There was a rapid recurrence, and he then did a radical mastoid operation. Though a good deal of relief followed this, there was a further recurrence, and he used a heavy dose of radium, but without any good result. He hesitated to employ diathermy because the disease had now implicated the bone.

Dr. LOGAN TURNER pointed out that the case alluded to by Mr. Jewell might not have been one of recurrence or metastasis, but possibly a new tumour altogether.

Mr. SCOTT, in his reply, showed how very rare it was for secondary cancer to appear on a neighbouring surface, such as on a contiguous lip of the vulva. Nowadays there was no need to fear that necrosis of bone would be produced by diathermy.

Mastoid Fistula Closed by Tube-flap.

Dr. DAN MCKENZIE showed a boy, aged 9, who, after a Schwartze operation, was left with a large wound which would not close. Success followed the use of a tube-flap cut from the neck. Dr. McKenzie said that if he should meet with the same difficulty in another case he would cut the flap from the forearm.

Temporo-sphenoidal Abscess.

Mr. T. H. JUST showed a man, aged 32, who for five years had had discharge from both ears. During the past eight weeks he had been giddy; also had suffered from headaches and rigors for six days. Mr. Just carried out a radical mastoid operation, when he found a cholesteatoma, perisinus pus, with a clot in the sinus; therefore the sinus was obliterated. There was a large fistula in the external semicircular canal. A day or two later there was violent headache; the patient was drowsy. Exploration of the temporo-sphenoidal lobe revealed a large abscess which was washed out and the residue aspirated. Recovery thereafter proceeded without interruption. Three weeks later a plastic operation to close the wound behind the ear was done, but in a day there was again violent headache. The wound was thereupon left widely opened, and recovery was uneventful.

The case was fully discussed, and Mr. Just was much commended on his success.

GYNÆCOLOGICAL HOSPITAL ACCOMMODATION IN LIVERPOOL.—Negotiations for better accommodation, long on hand between the Shaw-street Hospital for Women and the Samaritan Hospital for Women, have now been brought to a happy conclusion. For many years these institutions have struggled against great handicaps in the shape of the improvised nature of their premises. House after house has been taken in as the work expanded and as far as possible altered, but narrow passages, small doors, and a multiplicity of rooms remained. The corporation have now given a suitable site, and the gynæcological hospitals of the city should before long have ample and efficient accommodation to carry on their good work.

MEDICAL SOCIETY OF LONDON.

INSULIN IN THE TREATMENT OF DIABETES.

A MEETING of this Society was held on Dec. 8th, under the presidency of Dr. EUSTACE M. CALLENDER, when Dr. GEORGE GRAHAM introduced the discussion by reading a paper on the Present Position of the Treatment of Diabetes by Insulin, which appears substantially in full on p. 1265.

Prof. HUGH MACLEAN agreed that insulin had been a very great success in the treatment of diabetes, and when one met with an uncomplicated case one could say, almost with certainty, that the disease could be controlled by the intelligent use of insulin. He foresaw that the discussion on the best methods of using the new preparation would last for some years. The safest way was to observe what Nature did, and if that process was followed by the physician, he could not go far wrong. Keeping the blood-sugar within normal limits was comparatively easy with the patient in hospital, but when there was not this control it might prove a very difficult matter. It was difficult to so arrange matters that there would not be a small quantity of acetone in the urine. He did not quite agree that when a patient on a certain amount of carbohydrate stopped insulin there was a great danger in so doing. A patient who had been living as a result of the insulin he was taking might pass into coma, but in cases of medium severity he had seen the patient stop his insulin with no supervention of symptoms. He deplored the fact that the lay press had published far and wide the statement that when once insulin had been commenced it must be continued. Severe cases would naturally have to continue it, but that was not the fact in regard to moderate ones. He agreed that children made difficult subjects, and said that, in winter especially, when they had other complaints, they were liable to coma. A question which was now being asked was as to whether a diabetic person under treatment with insulin might be given medical permission to marry. Without expressing a decided view, he thought the psychological effect on the patient of a negative answer on this question might prove as harmful as permitting him to take the risk of matrimony. In the case of a medical man with the disease, who was taking insulin, he gave permission to marry. He was inclined to agree with the American authority who said that every patient under 40 suffering from diabetes of definite degree should have insulin; he did not mean those who simply had a defect of storage without evidence of lack of oxidation, as they might go on for many years. He referred to an extraordinary type of case in which there was definite renal glycosuria associated with definite diabetes. The patient passed almost into coma, yet the blood-sugar never went beyond 0·25, and later came down to 0·18. After 5 units of insulin she had definite symptoms of hyperglycæmia. In conclusion, he spoke of the definite tonic effect of insulin on some patients.

Dr. C. M. WILSON said the whole question of the value of insulin in diabetes was still sub judice. It was necessary to have series of cases treated in both ways and compare them He did not think that had yet been done, and even if it had, the time which could have elapsed since the introduction of insulin had not been sufficient for a judgment to be formed. In the present state of knowledge it was important to keep the blood-sugar within normal limits; and, that being so, was it best done by dieting or by the use of insulin? The general tonic effect of the latter made the problem a difficult one from the scientific standpoint. He hoped to hear something about the elderly diabetic who had eye symptoms. What had been the result of the use of insulin in these diabetics with diabetic retinitis? He had seen several such treated with insulin, and, on the whole, the results were somewhat disappointing. Elderly and young diabetics were usually keen on the treatment, but the middle-aged subject was apt to treat the matter lightly, and to be

very reluctant to conform to the rules laid down for him. He agreed that insulin had been most valuable in the dramatic cases, such as the comatose, but there was still needed a good deal of careful observation and comparison.

Dr. E. G. B. CALVERT related his treatment of four selected cases of diabetes by insulin and gave the results. Winter and Smith, and others, showed that parathyroid enhanced the action of insulin, possibly by preventing the loss of calcium; similar beneficial effects occurred in Graves's disease, in which also there was a calcium loss. In cases without ketonuria or signs of acidosis, improvement after parathyroid was nil, but when acidosis or ketonuria was marked small doses did considerable good. He had also been noting the influence on metabolism of dextrose, fructose, sucrose, and starch when given with varying doses of insulin. These he stated at length, emphasising in this connexion the great value of orange-juice.

Sir JOHN BROADBENT referred to an extraordinary case which he had under his care last summer—that of a man who had 6 per cent. of sugar in the urine, and whose blood-sugar was 0·29 per cent. Two days of starvation did not materially reduce either. He was put upon insulin and the dose gradually increased to 25 units twice a day—i.e., 50 units per diem—taking at the same time only 10 g. of carbohydrate. Still his blood-sugar was 0·25, and the urinary sugar 4 per cent. He was then starved 72 hours. The urine thereafter became sugar-free, and he was again put on to 10 g. carbohydrate and had 10 units of insulin on this diet. He had remained sugar-free without insulin. His carbohydrates having been steadily increased until the quantity was now 40 g., he had since remained sugar-free without insulin.

Dr. W. LANGDON BROWN said much injury had been done to the cause of the treatment of diabetes by insulin by the unfortunate remark that people who started with insulin must continue with it for the remainder of their lives. He thought Dr. Wilson had taken an unduly pessimistic view of the outlook. He gave some particulars of successful cases in children treated by the preparation, and expressed his strong view that the outlook for diabetic patients was now much better than at any former time.

Dr. E. P. POULTON advocated, in some cases, splitting the daily dosage of insulin into three portions. He related a number of cases, and advocated the use of insulin, especially in young cases, as soon as the symptoms began to be manifest. In older patients the first definite effect of the insulin seemed to be the disappearance of the tiredness which had been so striking. Carrots and Jerusalem artichokes were much preferable to bread and oatmeal and potatoes.

Dr. GRAHAM, in a brief reply, said he regarded the retinitis as a part of the arterial condition in these diabetics. One reason why children were such difficult subjects was the risk they ran of acute infectious fevers, &c., and he did not know how this risk was to be diminished. With regard to marriage, permission to marry could not be so freely given to the woman as to the man, as the former had the very real risks attending pregnancy, the incidents of which were liable to place a great strain upon her in the presence of such a disease as diabetes.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

A MEETING of this Society was held at Sheffield on Nov. 21st, Prof. A. DONALD, the President, being in the chair.

The discussion on the President's paper on the

Treatment of Mobile Backward Displacements of the Uterus,

adjourned from the previous meeting of the Society, was resumed (THE LANCET, Nov. 8th, p. 964).

Mr. W. W. KING (Sheffield) said that he only operated upon those cases of mobile retroversion in which the symptoms were relieved by replacement of the uterus and the use of a pessary. No woman objected to the use of a pessary for three months when it was pointed out that it was being used as a test as to the advisability or otherwise of operation. The use of this test eliminated the necessity for suspension operations in all but a very few cases. He considered that dyspareunia, sterility, and repeated abortions were, of themselves, indications for operation. He related cases of the cure of symptoms by sling suspension operations and their recurrence when the round ligaments gave way, so that the uterus again became retroverted. He took this to prove that retroversion did sometimes cause symptoms. He rarely undertook the operation of curettage except as a diagnostic procedure or in cases of retained products of conception.

Dr. LEITH MURRAY (Liverpool) tabulated his cases of ventro-suspensions during the three years 1921–23; they numbered 31 of a total of 593 abdominal operations carried out at the hospital for women. Of 12 cases nine were in married nulliparous women, mainly for sterility, and three were in single women and were decided on after exploration, an original diagnosis of mild inflammatory disease having been made. He was in complete agreement with the President, that there was little need for suspensory operations in nulliparous women, but contrasted the large number of cases for which the President recommended curetting with the rare occasions on which he himself considered this necessary. No single woman was curetted during the three years analysed, and only one married nulliparous woman. With regard to multiparous women he found much difficulty in appraising the more usual complications of child-bearing, such as subinvolution, mild appendage disease, and slight descent, in relation to symptoms. He considered that in mobile retro-displacements hyperæmia was intrinsic, and was not determined by the backward position. Curettage was the best treatment for subinvolution, except possibly in very big, heavy, tender, and retroflexed uteri, where he was of the opinion that a suspensory operation in addition to the curettage would more quickly lead to improvement. He preferred the term functional hyperactivity to "disordered action of the uterus" and subinvolution, in most cases, to "endometritis."

Mr. MILES H. PHILLIPS, who was unable to be present, had asked Dr. JOHN CHISHOLM to express the following views on his behalf. He was in agreement with Prof. Donald that the chief symptom of mobile retroversion was: (1) pelvic discomfort, varying in amount, and even in the same patient at different times. If neglected, frequently neurasthenia followed. The other troubles were: (2) sterility, (3) liability to abortion, and (4) dyspareunia, more especially when the ovaries were prolapsed. All these symptoms, if uncomplicated by other conditions, could be cured by replacement of the uterus, and its retention by a pessary or suspension operation. Mr. Phillips was astonished that cases of this kind occurred so rarely in the President's practice. The retroversion, however, was often of much less importance than some other conditions also present, for example: (1) gonococcal or other infection of the cervix, endometrium, myometrium, or appendages; (2) vaginal prolapse; (3) hypertrophied vaginal cervix. To overlook these and attend only to the retroversion was a frequent cause of disappointment. Often it was easy to tell what degree of attention the retroversion required in the inflammatory cases. But, in others, a pessary was first employed as a test before operation was advised. Mr. Phillips was satisfied that a retroversion did not cause endometritis. This was a statement made by people who looked upon any condition of hyperplasia as being caused by endometritis. He believed that congestion of the cervix and body of the uterus were produced by retroversion in many but not in all cases. This depended on the tone in the broad ligaments and utero-sacral folds. He was astonished that the

President had overlooked the paper by the late Sir W. Japp Sinclair on the engorgement and erosion of the posterior lip of the cervix in retroflexion. The speaker had on many occasions demonstrated that the condition disappeared after the uterus had been put in its proper position, a fact which pointed to some interference with the circulation. Again, drainage was interfered with by a retroversion in the puerperium and occasional cases of lochiometra resulted. In these the benefit of the semi-prone position for an hour or two, or even longer in bad cases, before the retroverted uterus could be reduced, was often seen. Mr. Phillips knew of three cases of acute abdominal pain produced by the retroverted uterus being caught and held by the utero-sacral folds. In two of the cases the surgeon at the operation (abdominal section) had considerable difficulty in dislodging the fundus, although there were no adhesions. In one of these cases the patient was a young nurse who was lifting a heavy bed.

DR. FLETCHER SHAW said his views on this subject exactly coincided with those of the President, and, as he had on two previous occasions collaborated with him in papers upon this subject, there seemed no object in further reiterating his views, but it might be useful if he gave the reasons for his convictions. Many years ago, when resident surgical officer at St. Mary's Hospitals, he worked under two chiefs whose views were diametrically opposed on this subject. In one ward these mobile retroflexed uteri were always fixed up and in the other ward they were treated by curetting, just as an anteflexed uterus with the same symptoms would be, and in order to form his own opinion on the subject he had investigated a large number of these cases which had been treated by curetting. The symptoms were tabulated, the position of the uterus noted, and a questionnaire sent to each patient asking for the result in each separate symptom. These patients were then divided into two groups: anteflexed and retroflexed uteri. In each group the symptoms were the same, the only difference being the position of the uterus, and so if retroflexion was the cause of the symptoms it would be impossible for curetting, which left the uterus in the same position, to cure this group. The results showed, under every heading, that the group of retroflexed uteri had a slightly higher percentage of cures than the anteflexed uteri. That was many years ago, but quite recently he had made another investigation of a series of his own cases—163 altogether—and found the results exactly the same. The anteflexed uteri gave 75·7 per cent. of cures and the retroflexed 82 per cent. After this investigation it would be impossible to believe otherwise than that a mobile retroflexion did not produce symptoms, except in very rare instances. He thought that practically all the speakers in this discussion were in agreement with the President, who believed that retroflexion did not produce symptoms, but he granted that, like almost everything in medicine, there were a few exceptions, and most of the speakers who were supporting ventral fixation in this discussion seemed to be arguing largely from these exceptions, as they very seldom performed ventral fixation for simple mobile retroflexion.

Reply.

The PRESIDENT, in replying, said that as he had dealt with most of the criticisms which were really pertinent in the body of his paper he would not occupy more time. Some of the speakers had evaded the main point at issue—mainly the significance of retroversion and the criticisms of the congestion theory. He thought that he might say that the discussion as a whole showed that the feeling was against the indiscriminate performance of suspension operation.

WEST KENT MEDICO-CHIRURGICAL SOCIETY.—The third meeting of the session will be held at the Miller General Hospital, Greenwich, S.E., to-day (Friday) at 8.45 P.M., when the Purvis oration will be delivered by Mr. Bellingham G. Smith on the Importance of Antenatal Clinics. This will be followed by a demonstration of the super-microscope by Mr. F. Davidson, illustrated by lantern slides.

ROYAL COMMISSION ON LUNACY AND MENTAL DISORDER.

FURTHER SITTINGS.

(*Continued from p. 1134.*)

THE Commission resumed its sittings on Dec. 2nd, with Mr. H. P. Macmillan, K.C., presiding.

EVIDENCE OF EXECUTIVE OFFICERS.

Mr. H. F. Keene, the Chief Officer, Mental Hospitals Department, L.C.C., continued his evidence. He said discrimination was now made in regard to diet between manual and non-manual workers, the dietary being now less rigid than formerly. During 1923 3152 patients were admitted to London mental hospitals and 881 were discharged recovered. During 29 years 30,718 patients had been discharged recovered, and of these 9177 had been readmitted, one-third of them within 12 months of their discharge. Questioned by the Chairman as to the extent to which visiting committees safeguarded the interests of patients, he said he thought the present arrangements in respect to visiting committees did safeguard the patients' interests, and medical officers and chaplain and visiting ministers helped in that matter also. He said the population of the mental hospitals under the L.C.C. was 18,918, and that of the institutions of the Metropolitan Asylums Board was 5148. In the latter establishments there had been a diminution in the number of chronic and harmless lunatics of recent years.

Mr. W. G. Lobjoit, J.P., who is chairman of the Visiting Committee of Middlesex Mental Hospital, was strongly of the view that there should be two certificates for the detention of all cases, whether rate-aided or private. If, however, only one certificate was agreed to, it should be given by a doctor expert in mental diseases.

Mr. W. E. Lovsey, representing the Visiting Committee of the Birmingham Mental Hospitals, also urged the assimilation of procedure in Poor-law and private patients. He thought the present system of discharging patients worked without any injustice. Dealing with the question of allegations of ill-treatment, he said that in his ten years of experience disciplinary action had had to be taken in only one instance, that of a probationer.

EVIDENCE OF MEDICAL SUPERINTENDENTS.

Dr. Henry Yellowlees (medical superintendent, The Retreat, York) and Mrs. Constance Crosland (a member of the managing committee of that institution) were the next witnesses. Dr. Yellowlees explained that only private cases were taken at "The Retreat." Its foundation was due to the Society of Friends, and it was run on lines parallel with those of the other 12 registered hospitals. The hospital was not on the villa system, though it had two or three associated villas. There were 180 beds in the establishment, and the institution was mostly self-supporting. There were two medical officers in addition to himself. He thought that before a nurse finished her training for a permanent position in a mental hospital she should have had experience in a general hospital. In reply to questions, the witness spoke of the system followed should there be any complaints by patients. He preferred that the nurse should be present during the hearing of the complaint. A medical officer of experience and knowledge saw every patient every day, and he did not think any greater safeguard could be provided. Most of the complaints received had reference to roughness practised by the younger nurses. One was in respect to a female patient who had a very strong objection to taking a bath, and other patients who heard the struggles reported that torture was being carried out. Mrs. Crosland herself witnessed the next attempt, and saw it was necessary to carry the particular patient to the bath in a sheet, and the

struggling was so violent that it was impossible to avoid dropping her. Dr. Yellowlees agreed, in answer to Earl Russell, that in some such cases an ordinary washing would suffice. With regard to patients' letters, the medical witness said that when he had been warned about letters to particular persons, he took care that any so addressed were not sent. Otherwise freedom was allowed in this matter. He spoke of the parole allowed, during which patients went shopping in the town or visited relatives. Sometimes relatives of patients from a distance took accommodation in the town so that such visits could be paid. He did not have to turn applicants away through lack of accommodation. Sometimes patients were sent there who might well have been treated elsewhere first, such as those with acute delirium, which might be recovered from in three or four days. In practically all the cases which came to "The Retreat" the boundary line into definite insanity had been undoubtedly passed, and it might be said that a proportion of them would not have crossed that boundary if proper treatment had been commenced early. It was a gradual process. He once declared, in an article, that it was only in a court of law that a man was declared to be sane on a Monday and insane on the Tuesday. In his institution recently he tested the feeling of all the certified patients, by means of a questionnaire, as to whether they definitely resented their detention. If an answer was at all resentful it was included in the affirmatives. The result was: Yes, 15; incoherent, silent, or doubtful, 46; No, 89. If, when a patient was ready to be discharged recovered, it was represented by the relatives that the conditions at home were not favourable for his reception and he thought this was not genuine, he discharged the patient, and so forced the relatives to do their part. In answer to a further question, the witness said he did not know of cases in which a discharged patient changed his medical attendant out of resentfulness for what had happened. Dr. Yellowlees detailed the equipment of the hospital for treatment purposes and the care exercised over the custody and administration of hypnotic and other drugs. He had not known of drugs, such as croton oil, being given for punishment purposes. The nurses in his institution were in the proportion of one to every two patients, but that was largely because some patients paid for the exclusive services of one, sometimes two nurses. Patients suffering from epilepsy or from the gross congenital defects were not received at the institution. About half the admissions in any one year were voluntary boarders, and not certifiable. In answer to Sir David Drummond, he admitted it would be an advantage to have a woman doctor on the staff of a mental hospital; many of the female patients expressed a preference for a woman attendant.

Dr. J. G. Porter Phillips (physician-superintendent of Bethlem Royal Hospital) was the next witness. He was accompanied by Mr. Lionel L. Faudel Phillips, the governor of the hospital. He said the voluntary boarder system had been in vogue at Bethlem for 40 years, and from the careful observations made by his predecessors and himself he considered it was a system to be encouraged in every way. Nearly 40 per cent. of the inmates were voluntary patients, and the straightforward voluntary patient did not cause trouble; he knew he was ill, and sought advice. Quite 70 per cent. of the patients were admitted on a free basis, the expense being met by a charitable foundation. Among voluntary patients he had had a recovery-rate as high as 50 per cent. Quite a number were restored to society without certification, and he advocated an extension of this system of voluntary residence. For all patients he would like to see operative a temporary "observation order," with some necessary power of control, but short of that attaching to certification. This would probably result in a reduction in the number of certified patients. A certain number of cases could be adequately looked after and treated in a general hospital, not in the general wards, but a separate wing or special wards could be set apart for them. Their mental state might be causally associated with acute physical illness, and then everything was to be gained by retaining the atmosphere of a general hospital; certainly the patients had more confidence in themselves. In the mental out-patient department at St. Bartholomew's Hospital the patients derived great benefit, but they sometimes retrogressed between visits. That hospital had no wards for mental cases.

Mr. Faudel Phillips spoke of his work at Bethlem Hospital and his investigation of complaints. In ten years he had not seen a patient whom he considered to have been wrongfully detained. He expressed himself as strongly in favour of the system of voluntary patients. The stigma attaching to certification was a very real thing, and the very name "Bethlem"—corrupted to "Bedlam"—was an obstacle to the hospital's work. Perhaps 99 per cent. of the patients on leaving thanked the doctors and the committee for what had been done for them. In reply to Sir Humphry Rolleston, Dr. Porter Phillips admitted it would be a great help if there were a system whereby a patient agreed to his detention for such time as the doctor decided was necessary.

Reviews and Notices of Books.

ANAPHYLAXIS AND SENSITISATION.

By R. CRANSTON LOW, M.D., F.R.C.P., Assistant Physician for Diseases of the Skin, Royal Infirmary, Edinburgh. Edinburgh: W. Green and Son, Ltd. 1924. Pp. 384. 25s.

THIS volume is a reproduction of a thesis submitted by the author for the degree of M.D. of the University of Edinburgh, and we are not surprised to learn that it gained a gold medal. Some idea of the labour involved in its preparation may be gathered from the fact that the bibliography of references at the end occupies 75 pages, roughly one-fifth of the whole volume. The value of such a complete bibliography in itself is, of course, very great, and the author deserves the sincere thanks of his fellow-workers for its compilation; but the chief merit of the book lies in the impartial way in which he has collected the facts established and the theories put forward by others, and incorporated with them results of his own investigations and his own views. It is, of course, mainly with reference to diseases of the skin that the problems of anaphylaxis and sensitisation are considered, but the first two chapters form a good survey of our present knowledge of the whole subject. Serum sickness is generally regarded as a true anaphylactic phenomenon, and the author considers that the natural hypersensitiveness to foods, animal emanations, and plants which characterises certain persons, and is manifested by urticarial rashes, gastro-intestinal disturbances, hay fever, and asthma, is also of an anaphylactic nature. This view has, of course, been warmly contested, but the objections to it do not bear analysis. The hereditary transmission of this hypersensitiveness, which has also been denied, is a striking point, and may correspond to the transmission of sensitiveness to their young by experimentally sensitised animals.

After these two introductory chapters, various skin diseases, in the production of which sensitisation may be assumed to play an important rôle, are considered. Urticaria of internal origin is in all probability always a true anaphylactic phenomenon, as the observations of Widal and others would suggest, but the various drug-rashes can hardly be so regarded, since experiments on animals, with a view to producing in them active and passive anaphylaxis to drugs, have proved negative with a few doubtful

exceptions; it is, however, possible to desensitise a person to a drug by preliminary small doses or by prolonged administration of minute doses. In the chapter on the erythemata and purpura, the author rightly takes the view that erythema exudativum multiforme is a clinical entity, and should be separated from the erythemato-urticarial eruptions that may follow the taking of drugs, of certain foods, and the administration of foreign sera. There would seem to be no doubt that true recurrent erythema multiforme is due to sensitisation of the skin to a streptococcus, possibly a specific strain which cannot, however, be at present defined by laboratory tests. Dr. Low states that "erythema multiforme is not associated with true rheumatic fever, and any rheumatic eruptions are possibly due to absorption from the throat or other septic focus." This statement raises the question: What is true rheumatic fever? That erythema multiforme occurs not infrequently with attacks of typical acute rheumatism and rheumatic endocarditis is unquestionable, and we have seen it usher in a fatal malignant streptococcal endocarditis in a child with old rheumatic valvular disease. We must admit that we cannot see any reason for separating acute rheumatism from other forms of streptococcal arthritis and endocarditis, although it may be admitted that different strains of streptococcus are probably responsible for the different types of cases met with. The same question arises, of course, with regard to erythema nodosum, the association of which with acute rheumatism has been affirmed by some and denied by others. It can hardly be doubted that the usual form of erythema nodosum is due to streptococcal infection, the lesions bearing the same relationship to this infection as erythema induratum bears to tuberculosis; streptococci have actually been demonstrated in the lesions and have been found in the blood during an attack. There is no more reason to suppose that it is caused by a specific organism other than a streptococcus than in the case of acute rheumatism, and Rosenow's claims to have isolated a specific diplo-bacillus require the confirmation that is singularly lacking in nearly all his work on focal infection. It is obvious that this, the common form of erythema nodosum, is the deep or subcutaneous variety of true erythema multiforme; the two may appear simultaneously, and cases have been seen in which recurrent attacks of one or the other recurred over a period of several years until the tonsils were enucleated and an autogenous streptococcal vaccine given.

At the same time nodose erythema and eruptions of the erythema multiforme type may occur in persons sensitised not only to infections other than streptococcal, but to sera and certain drugs. Thus the evidence that an erythema nodosum, distinct from erythema induratum, may be a manifestation of tuberculosis is very strong, and probably the same is true in leprosy and syphilis; it is also a rare form of trichophytide, and, of course, nodular erythematous lesions may be produced by iodides. To sum up, although erythema multiforme and erythema nodosum in their most characteristic forms may be regarded as specific entities and due to streptococcal infection, similar types of cutaneous reaction may be caused by sensitisation to other toxins. In a short chapter on dermatitis herpetiformis and pemphigus, Dr. Low suggests that the former is "due to sensitisation of groups of cutaneous nerve-endings to some bacterial protein from the bowel." He is also inclined to consider pemphigus vulgaris as having a similar cause, but in this disease there is probably a general infection of the blood and internal organs, whereas in dermatitis herpetiformis the infection is confined to the intestines. He refers to the bacteriological work of Radaeli and Tominasi, but does not mention the more recent observations of F. Eberson.

After dealing with sensitisation in tuberculosis and syphilis, Dr. Low contributes a most valuable chapter on sensitisation and immunity to fungus infections. The important work of Jadassohn, Bloch, Rasch, Sutter, and others on the trichophytides has not been given the recognition it deserves in text-books of dermatology, and we welcome the very full account that is here provided, not only of the observations of the above authors, but also of Dr. Low's own investigations in this subject. The study of the mode of production of these trichophytides and the tuberculides, and of the close analogy that exists between the two, is one of the most fascinating subjects in dermatology, and has thrown much light on the pathogenesis of skin eruptions in various infections. The chapters on dermatitis venenata, in which the author's well-known experiments on himself with *Primula obconica* are described in detail, and those on eczema and focal infection, afford an admirable review of these subjects, which are almost of as much importance to the general physician as to the dermatologist. We are delighted to find at last an intelligent account of the pathogenesis of eczema, seborrhœic dermatitis, and seborrhœic eczema, and with Dr. Low's views we are for the most part in entire agreement. Eczema, of course, is merely a reaction of the skin dependent on epidermal sensitisation, and this sensitisation may be due to an external irritant or to a toxin absorbed from within. The actual sensitising agents are numerous and varied; thus they may be chemical, of animal or vegetable origin, or bacterial. The confusion between so-called seborrhœic dermatitis and seborrhœic eczema is quite unnecessary; the former term should be applied to the group of eruptions that occurs in seborrhœic persons, in which the inflammatory changes in the skin are entirely due to the active growth of the seborrhœic organisms, the staphylococcus, and the "bottle-bacillus" (it is doubtful whether the microbacillus ever causes inflammation, although it is the cause of the comedo of acne); these eruptions are exactly comparable to tinea circinata. When, however, sensitisation of the skin to the staphylococcus takes place, an eczema results and the eruption is no longer due merely to the parasitic growth in the skin of the staphylococcus. Seborrhœic dermatitis is easily cured temporarily by local applications, but seborrhœic eczema is intolerant of such treatment, and, the skin being in a sensitised state, the eczema is made worse by their use.

The last two chapters deal with tests for cutaneous hypersensitiveness and non-specific desensitisation. The cutaneous protein tests, which have been much in vogue of late, are discussed in detail. With regard to non-specific desensitisation, various methods are considered—e.g., intravenous injections of typhoid and other vaccines, peptone, intramuscular injections of milk, and autosero- or auto-hæmotherapy. Dr. Low gives details of cases treated by himself with peptone and with milk. Prurigo, psoriasis, seborrhœic eczema, and generalised exfoliative dermatitis were the principal conditions treated. With the exception of one case of psoriasis, in which exfoliative dermatitis supervened, and which reacted very well to injections of milk, the results were not good. No cases of seborrhœic eczema treated by injections of peptone are, however, recorded, although the author's colleague, Dr. Frederick Gardiner, has testified to their undoubted value in this condition. On the whole, however, non-specific protein therapy and auto-hæmotherapy have not yielded the results that were at one time looked for; occasional brilliant successes have been recorded by a number of authors, but both methods are very inconstant and usually disappointing.

Dr. Low's book deserves a very warm reception from the whole medical profession; it is the result of many years toil and is a great credit to the Edinburgh School of Dermatology, which, under the inspiration of Sir Norman Walker, has deservedly earned its reputation for the excellence of its teaching and the sanity of its views. The volume is very well produced, the illustrations, though few in number, are well chosen, and the printing in large type of the names of the authors referred to is a welcome innovation.

RECENT ADVANCES IN MEDICINE.

Clinical, Laboratory, Therapeutic. By G. E. BEAUMONT, M.A., D.M. Oxon., F.R.C.P., D.P.H. Lond., Assistant Physician to the Middlesex Hospital, and to the Hospital for Consumption and Diseases of the Chest, Brompton; and E. C. DODDS, M.B., B.S., B.Sc. Lond., Chemical Pathologist to the Middlesex Hospital, Bland-Sutton Institute of Pathology, and Lecturer in Biochemistry in the Medical School. London: J. and A. Churchill. 1924. Pp. 292. 10*s.* 6*d.*

IT is with increasing difficulty that the physician is able to keep pace with the recent advances in biochemistry and other departments of scientific medicine and to apply them in his practice. Only those who have access to a wider field of literature than the ordinary practitioner, or are in the fortunate position of being able to interchange ideas and information with workers in different countries, can hope to be leaders in the application of such discoveries. As the outcome of the combined efforts of a physician and a biochemist who are engaged daily in the routine application of the newer methods this book is of exceptional value. The first chapter deals with the chemical analysis of the blood by the methods of Folin and Wu. It includes also an account of MacLean's method of blood-sugar determination, the estimation of the fragility of the red cells, the cholesterol content, and a section on blood-grouping. Succeeding chapters deal with renal function tests and their practical application; tests for glycosuria and acetone bodies; an account of acidosis and methods for its determination, with a section on diabetes mellitus and its modern treatment. The investigation of pancreatic, hepatic, and gastric functions is dealt with in detail, and methods for determining basal metabolism are given with their interpretation. A chapter is devoted to the investigation of the heart, and includes an account of the polygraph, electrocardiograph, and blood-pressure apparatus, to which is added some notes on digitalis (including Eggleston's method of administration), strophanthus, and quinidine. The electrocardiograph is described briefly, although little is said as to how to use it. The interpretation of electrocardiograms is more fully dealt with, with the aid of 13 examples from Lewis's "Clinical Electrocardiography." Further chapters include artificial pneumothorax, the protein reactions in hay fever, asthma, and urticaria, Schick test for diphtheria carriers, the diagnosis of the enteric group of infections, and the examination of the cerebro-spinal fluid.

In fewer than 300 pages Dr. Beaumont and Dr. Dodds have thus collected a mass of information of high value; often they have added comment of great excellence, and there are interspersed accounts of several recent therapeutic advances which are not easily accessible. In these chapters are to be found complete technical descriptions of nearly every laboratory test of proven utility, although we miss any description of methods for estimating the calcium content of the blood, and of the tests for mucin and pus in the urine. A book containing a description of the macroscopic Widal test and the cutaneous tests for asthma should perhaps also give the technique for the quantitative von Pirquet reaction, and since methods of blood-grouping and estimation of corpuscular fragility find a place, a subsequent edition might well include an account of modern methods of counting and measuring the blood corpuscles. The chapters are enriched by comments in which the value and limitations of the various tests are discussed, and in many cases, particularly with regard to renal, pancreatic, and hepatic function and basal metabolism, these comments will be found of great utility.

Perhaps the authors have attempted too much, and many of the therapeutic measures described can be found in other easily accessible works. But it is a real achievement to have brought together successfully within the compass of a small book all the important recent advances in practical medicine. The volume should find a place in every clinic where attempts are made to keep abreast of the times in laboratory methods. It will also make a strong appeal to the practitioner, who, though he may have no opportunity of carrying out tests for himself, must have sufficient knowledge of the technique involved and of the interpretation to be sought from their results to satisfy himself and the patient that they are worth the inconvenience and expense involved.

DISEASES OF THE SKIN.

Hautkrankheiten (Mracek-Jesionek). Fifth edition. Edited by Dr. P. MULZER, Professor of Dermatology and Syphilis at the University of Munich. Munich: Lehmanns Verlag. 1924. With coloured plates. Pp. 260. M.22.

A COPIOUSLY illustrated text-book of dermatology has two main advantages: (1) It recalls the visual memory of cases formerly studied in the skin out-patient department, and (2) it records actual cases, and affords to dermatologists of other countries an opportunity of revising nomenclature and keeping it up to date. Coloured plates, therefore, tend to international standardisation, and are for that reason greatly to be encouraged in dermatological literature. Several different processes appear to have been utilised in the coloured reproductions of this book, and the results are therefore very uneven. The most pleasing and true to nature are the group of colour-photographs towards the end of the book, dealing with tinea in its effects in various situations on the body and scalp. These plates are not original, being reprints from an excellent text-book, "Fadenpilz-Krankheiten," on this subject, by R. O. Stein-Henning. Intermediate in accuracy and artistic value are some coloured reproductions of museum moulage specimens, while very crude and sometimes even misleading are the old-fashioned prints from original water-colour sketches. These are doubtless relics from a former edition, and might well have been omitted. There are also a number of good plain photographs, which to the trained eye, at any rate, are of more use than the last named. Most of the plates are described from actual cases, which are reported, in some detail, on the opposite page. This seems an excellent plan, and one which adds greatly to the interest and educative value of the letterpress. Treatment is discussed in general terms in a dissertation of 38 pages at the beginning of the book. Under the different diseases it receives more detailed consideration, and differential diagnosis is also shortly specified. The arrangement of the text could be improved. The subjects appear to have been taken haphazard, and there is no attempt at classification on modern lines. This necessitates a constant and tiresome reference to the index, and entirely obviates the possibility of consecutive reading.

On the whole this book can be recommended both to students and practitioners with a knowledge of the German language as reaching a fairly high standard as a text-book.

TOXICOLOGY, OR THE EFFECTS OF POISONS.

By FRANK P. UNDERHILL, Ph.D., Professor of Pharmacology and Toxicology, School of Medicine, Yale University. Philadelphia: P. Blakiston's Son and Co. 1924. Pp. 292.

THIS manual of toxicology, intended as the preface states for medical students and physicians, has many excellent features. The material is well and concisely put together, and each poisonous substance is treated systematically as regards general properties, symptoms, fatal dose, post-mortem findings, and treatment.

The author, at the outset, states that no attempt has been made by him to enter into details of the isolation and identification of poisons. The word "toxicology" may be taken to mean the science

of poisons, covering a wider field than the subtitle. The omission of any analytical detail is unfortunate. It is doubtless true that the student of medicine and the physician are not expected to have skilled knowledge of this branch, but they should at some period of their academic career have mastered the general principles. In cases of poisoning where, for example, a bottle is found beside the patient, the knowledge of a few simple tests for some of the commoner poisons may enable the physician to gain an idea of the nature of the poison, which will greatly assist him in his diagnosis and treatment. Though omitting details of this sort the author does not hesitate to give in full the constitutional formulæ of a number of the complex organic drugs, including the alkaloids, many of which are still speculative. This branch of the subject is intriguing, but it is rather overwhelming. Incidentally the graphic formulæ for antipyrin and camphor are incorrectly rendered.

The sections on treatment are good, and the author has been wise in omitting the older traditional antidotes which have little, if any, practical value, such as ferric hydroxide in arsenical poisoning. In carbon monoxide poisoning mention is made of the value of the inhalation mixture of carbon dioxide and oxygen in order that alkalosis of the blood may not occur, and it is pointed out that transfusion of blood, if it is to be of value, must be done at once.

At the end of each subject references are given to journals and books, most of which are recent. It is satisfactory to find this, since too often in works on toxicology and forensic medicine cases of half a century ago are depended on for details, and when such cases are investigated they are often of doubtful value.

Altogether a useful manual.

UNSCIENTIFIC ESSAYS.

By FREDERIC WOOD JONES, M.B., D.Sc., Elder Professor of Anatomy in the University of Adelaide. London: Edward Arnold and Co. 1924. Pp. 208. 6*s*.

THIS book of essays is concerned with "the expression of things too trivial and too inexact to be reckoned as scientific." Prof. Wood Jones indeed plays happily, like a child "tidying" his mother's silks, with the confused medley of skeins and reels in Nature's work-basket. He makes no methodical attempt to disentangle the threads, but, picking up a strand here and there, he unravels it from its fellows and follows it far enough to indicate clearly its origin and probable destination; then he drops it, intrigued by the colour, quality, or texture of another strand. Thus he passes from the reasons why the iridescence of a patch of kerosene excites less rapture than that of the wings of a dragon-fly to those why coconuts never fall on a man's head; from the mystery of phantom tigers to the place of faith-healing in modern medicine. All must delight in the delicacy of his touch, and in the Christmas holiday season many will drop all other preoccupations to sit with him in Malaya, on the Banka Strait or on a coral island, and play with him the game at which his prowess is so infectious and so stimulating.

THE SITE OF THE GLOBE PLAYHOUSE, SOUTHWARK.

Second edition, revised and enlarged. By W. W. BRAINES, B.A. Published by arrangement with the London County Council. London: Hodder and Stoughton, Ltd. 1924. Pp. 112. 6*s*.

TWENTY-FIVE years ago the late Sir Walter Besant wrote: "The site of the Globe theatre is generally allowed to have been at a spot 150 feet south of Park-street, close to the Southwark Bridge-road and on the east of it." Ten years later this theory was attacked by a university professor from Nebraska who believed that Shakespeare's theatre was built on the north side of Park-street. Since Dr. C. W. Wallace published his articles in the *Times*, a controversy between the partizans of the North and South theories has raged intermittently, till it may now be said to have received its coup de grâce by the publication of the second edition of "The Site of the Globe Theatre." In this enlarged and revised edition of the first volume published three years ago, Mr. Braines has sifted every particle of evidence obtainable and has succeeded in demolishing one by one the arguments advanced by Dr. Wallace and Mr. George Hubbard in support of a north side site. With meticulous care he has examined the documents relating to the properties on both sides of Park-street, then called Maid-lane, the evidence of the early views and the statements of the various historians of Southwark, and the conclusions deduced in favour of the south side site may be taken as final.

The somewhat chaotic method of arrangement, by which the book ends on page 62, and then is carried on in six appendices for another 46 pages of equally interesting material, rather detracts from its value for a lay reader, but the student of old London, among whom a considerable number of medical men take a place, will find Mr. Braines's work extremely useful. The book is enhanced by 17 excellent illustrations, including reproductions of the Agas, Visscher, Merian, and Hollar views, and some interesting conjectural reconstructions by Mr. G. Topham Forest, architect to the London County Council, of "this unworthy scaffold . . . . this wooden O," on which Shakespeare once tried to represent the vasty fields of France.

PHYSIOLOGY.

Principles of General Physiology. Fourth edition. By Sir W. M. BAYLISS, M.A., D.Sc., LL.D., F.R.S., late Professor of Physiology in University College, London. London: Longmans, Green and Co. 1924. Pp. 882. 28*s*.

DURING the long illness of the late Sir William Bayliss the preparation of a fourth edition of his famous book was undertaken by various friends as a tribute of affection. Their earnest hope that he would recover, and be able himself to undertake a further edition in course of time, was disappointed. Everyone knows that this book marks an epoch in the history of the development of physiology; it is an indispensable reference book. In these days of specialisation, all must deplore the loss of a man whose knowledge was so wide and understanding so deep; the learning which could have produced from one individual such a comprehensive survey of physiological principles was indeed of no common order. Some 25 collaborators have assisted with the revision of the present edition; yet all these specialists felt satisfied that little alteration, beyond bringing a few details up to date, was required. The work will long remain a monument to one of our greatest scientific minds.

Fundamentals of Human Physiology. Third edition. By R. G. PEARCE, B.A., M.D., formerly Director, Medical Research Laboratory, Lakeside Hospital, Cleveland, Ohio; and J. J. R. MACLEOD, M.B., D.Sc., F.R.S., Professor of Physiology in the University of Toronto, Canada. Assisted by Dr. NORMAN B. TAYLOR. London: Henry Kimpton. 1924. Pp. 349. 18*s*.

THIS is a thoroughly sound introduction to elementary physiology, which students of medicine would profit by reading. It gives much really modern information in a clear and simple fashion, and is well produced. Our only fear is that the high price of the volume, which is perhaps in part due to the insertion of some coloured plates which might have been dispensed with, may prove an obstacle to the sale of the book in this country.

THE LANCET.

LONDON: SATURDAY, DECEMBER 13, 1924.

PAYMENT FOR RESEARCH.

A Berlin patent agent recently showed a list which he had compiled of famous scientists who were proprietors of bacteriological patents, telling a meeting of German naturalists that a decision of the German Patent Office had made it possible even to patent the vital processes of nature. This list might interest those who feel, rightly or wrongly, that there is some sort of taint about the word "scientist," put forward though it was 85 years ago by the learned Dr. WHEWELL. In the current issue of *Nature*, where the word and its associations are fully discussed, Prof. RAY LANKESTER implies rather unkindly that the word has acquired the significance of a charlatan's device. Professional feeling in Germany was at one time bitter on the subject of E. v. BEHRING'S large income from biological patents, wisely though he may have spent it, and there were widespread murmurs at the enhancement by royalties of the cost of salvarsan and its congeners. It is a little unfortunate that scientific results should require to be protected against commercial exploitation by the taking out of letters patent, and while the medical profession is under a debt to many reputable houses for the readiness with which they take up and apply the findings of recent research for the benefit of the public, it is also true that there are others who avail themselves of any striking line of work, however tentative, and commercialise it in no other interest than their own. We have recently become accustomed, in the case of insulin, to the taking of measures for the protection of scientific results against unworthy exploitation. In the September number of the *Journal of Biological Chemistry*, in connexion with a paper by H. STEENBOCK and A. BLACK on "The induction of growth-promoting and calcifying properties in a ration by exposure to ultra-violet light," there appears the following footnote: "To protect the interest of the public in the possible commercial use of these and other findings soon to be published applications for Letters Patent, both as to processes and products, have been filed with the United States Patent Office and will be handled through the University of Wisconsin."

The proper reward of scientific endeavour is a matter on which very divergent views have been held. The National Union of Scientific Workers of Great Britain has made a pronouncement upon it in a recent report of its Research Committee entitled "The Encouragement of Fundamental Research." This Committee divides research into "practical," that is to say, undertaken primarily with a view to results of a practical nature, and "fundamental," that is to say, research undertaken without any immediate expectation of such results—and it is with the latter that the report is concerned. Fundamental research is of value to the community for the obvious reason that it does often lead to practical results, but quite apart from what may be called its utilitarian aspect such research work is desirable for its own sake. It tends to produce a broadmindedness and to develop the intelligence of the individual engaged in it: research does, in fact, promote that inquiring turn of mind which is such a desirable quality of citizenship. How, then, is fundamental research to be encouraged? On the question of rewarding successful research by money prizes or by granting patent rights the report before us is emphatic in its disapproval. Payment by results is, in general, wasteful—this sums up in a sentence the Research Committee's opinion. Special grants in hard cases where investigators have obtained their results only by personal sacrifice are condemned on the ground that the real remedy is to prevent the occurrence of the hard case. Prizes are criticised because they offer encouragement often to those who are in no need of them. The granting of patents is only possible for the practical application of some new principle, and this is condemned as an unsatisfactory method of rewarding the research worker. Similar views are expressed in the recent report[1] of the Privy Council Committee for Scientific and Industrial Research. This Committee is "strongly of opinion that both the community and the original investigator would alike suffer if the seeker after new knowledge were encouraged to lay claim to a share in the profits that may accrue from the subsequent applications by other workers of purely scientific discoveries to productive ends." Against these negative views both reports are strongly in favour of securing adequate means of livelihood to the man of science. This does not only mean that salaries should be of a sufficiently high standard to enable the research worker to live; he should be able to live comfortably and enjoy the leisure and independence enjoyed by others of the same rank and class, whose services to the community can never be in the aggregate so great.

This brings us back to the financial support of research. In the direct method of financial encouragement the worker may be either full-time or part-time. The former is held to be desirable for the young worker and post-graduate student, and the report of the National Union of Scientific Workers urges that such work should always be undertaken in connexion with a university. While this recommendation raises several difficult problems, the principle seems to be generally accepted. Part-time research work presents several different points of view. Most university professorships are really part-time research posts, but in some cases it is to be regretted that the time allowed for research is insufficient. On the other hand, at the lower end of the scale many junior university appointments are so inadequately paid that students with the ability to undertake research are attracted elsewhere. Funds for the encouragement of research could admirably be devoted to the retaining of keen young minds. Then come the questions of grants for apparatus and for publication. While the offer of out-of-pocket expenses at the present time often produces results out of proportion to the sums expended, it is recommended that research workers should receive salaries large enough to enable them to provide their own material. Publication is undoubtedly a stimulus to research, and while grants in aid of this are very commonly made it is also desirable that the present overlapping of many societies and publications should

[1] Report of the Committee of the Privy Council for Scientific and Industrial Research for the Year 1923–24. London: H.M. Stationery Office. 3*s*.

be eliminated. The research worker has certain obligations to the community, but at the same time the community has many obligations to the research worker, and the claim of these workers is reasonable that they should be given adequate reward, so that they may pursue their investigations without financial worry and untempted by speculative prizes.

STIFF AND PAINFUL JOINTS.

CHRONIC arthritis, under which name we include all the conditions which used to be called rheumatic or poor man's gout, is a disease that is always with us, as it is has always been with our forefathers for hundreds, nay, thousands of years. Bones showing some of its unmistakable effects have been found in ancient Egyptian graves and cases of it seem to have occurred in almost every land and in most climates. The gout, which in the main is caused by over-indulgence in the pleasures of the table and of the bowl, becomes rarer year by year and bids fair to become only a pathological curiosity, but those forms of chronic arthritis which as far as we know are due to no excessive indulgences on the part of their victims, show no signs of departing from among us. The agricultural labourer has too often been rewarded for a manhood of frugal fare and hard labour in all weathers by an old age of crippled limbs and bowed back. The poor seamstress who has probably lived chiefly upon bread and tea has her hands so crippled as to preclude her earning any longer her scanty livelihood. Familiarity has bred not contempt for such sufferings but a certain degree of indifference, as compared with the interest and alarm with which we regard an epidemic of encephalitis or cerebro-spinal fever. We therefore welcome the address of Mr. JAMES R. KERR, which is printed in this issue and which very usefully draws attention to the important part that may be played by orthopædic treatment of chronic joint troubles. Much time has been spent in an attempt to classify the various forms of what used to be called rheumatic gout, but from the point of view of treatment it matters little whether with A. PRIBRAM we recognise 21 varieties or only two with R. JONES and R. W. LOVETT and others. The recognition of the existence of a proliferative and a degenerative type is of practical value, for the former is far less amenable to orthopædic treatment than is the latter, which, however, causes such a huge amount of suffering and disability to the middle-aged and aged of both sexes.

Pathologists have for many years been trying to find the cause or causes of this group of affections, but although various micro-organisms have been accused, no unanimous verdict has convicted any of them. It is true that the connexion with joint troubles of various septic foci—especially in the alimentary tract from the lips to the anus—has been practically established, and some striking cures have followed the removal of such foci, but there remains a vast mass of cases in which no such connexion can be established and no such cures claimed. Because complete cure can seldom if ever be hoped for, it has been too much the custom to regard these unhappy sufferers as beyond the reach of surgical help. When old BENGY, in "Tom Brown's Schooldays," asked the wise man for a cure for his lumbago, he was told that churchyard mould was the only thing that would cure "th' rhumatis," and this discouraging prognosis is still made with more or less circumlocution in only too many cases. The figures quoted by Mr. KERR from the report of the Ministry of Health make evident the vast importance of such diseases as arthritis deformans to the industrial population of this country, and arouse our pity for the terrible aggregate of suffering which accompanies them. Because cure is seldom probable, contemplation of them should not induce despair; should arouse a determination to use all the possible means of alleviation, and especially those orthopædic measures which offer the most hope. In many cases pain may be relieved and mobility restored or improved by operation on the affected joints. In others, and particularly when, for instance, only one hip-joint is affected, an arthrodesis may restore painless active movement to the body as a whole, although, paradoxically, it abolishes it in one important joint. More generally, correction of deformity, support by means of splints and instruments, and massage and physiotherapeusis directed to the restoration of movement and the redevelopment of atrophied muscles, play the most important parts in relieving disability.

It is one thing to awaken a consciousness of the value of active treatment of chronic arthritis in the profession generally. It is far more difficult to point out by what organisations such treatment can be made to reach the numerous cases which require it throughout the country. Great efforts have been, and are being, made to provide for the care and cure of crippled children by founding a network of hospitals and clinics all over the country, based on the model of the Baschurch (Shropshire) organisation. As yet the Central Committee for the Care of Cripples has probably had its hands full enough in watching over the interests of children, but there seems to be no reason why in time the benefits of the cripples' hospitals and clinics should not be extended to those adults who are so unlucky as to suffer from arthritis deformans. General practitioners throughout the country must be looked to for advice as to how early and appropriate treatment can be given to their crippled patients. At present no one can blame them if they refrain from tantalising the sufferers with hopes of relief, when they know that owing to the lack of adequate accommodation the necessary treatment is beyond their reach. There is, however, one class of cases which needs for its treatment no open operation, no elaborate or costly appliance, but which can be treated as well by the practitioner with the ordinary resources of medical practice as by a specialist in an elaborately equipped hospital. We refer to that form of arthritis which affects the wrists and the joints of the fingers, and of which the result is too often most disabling in that it interferes with wage-earning to a disastrous extent. The earliest possible constitutional and orthopædic treatment is desirable for such cases, which are most intractable if left untreated until gross changes have occurred.

THE CONDUCT OF A G.M.C. ELECTION.

AT a meeting of the Branch Council of the General Medical Council for England, which took place during the recent session, a report was submitted by Mr. NORMAN KING, the Registrar, on the conduct of the election of Direct Representatives; the contest concerned England only, as the Scottish and Irish Representatives were returned unopposed. From the report we gather that excellent work must have been done by the staff in bringing the Register up to date, so that it should serve as a trustworthy electoral roll, in supervising the issue of the ballot papers, and, most importantly, in the scrutiny of results. We all know to what an extent during the last few years the entries in our personal address-books have had

to be changed, so that it is not surprising to learn that when the outer covers of the voting papers were opened on their return, many of them contained changes of address for use in the future Register, as well as requests for the registration of additional qualifications and other matters which required attention. All this meant work for the staff that had to be done intelligently and promptly. Moreover, such a large shifting of residence implied the sending of duplicate forms, and the criticism of the Registrar's office, which appeared in certain daily papers, with regard to the late issue of some forms, was unintelligent. To those who had not notified a change of address voting papers could not be sent which should arrive at the earliest possible date, but the Registrar points out that some of the practitioners who wrote to say that they had received no voting papers made their complaint prior to the official date of issue.

It is an excellent thing that the medical constituency should keep the Registrar's office up to the mark, but it would be piquant to know whether some of the over-critical were among the considerable number of men who lost their votes by not attending to the clearly-printed instructions sent to them. The total number of voting papers issued for the English election was 29,179, of which only 607, or about 2 per cent., were returned as "dead letters," an occurrence which justifies any claim that the Registrar might like to make that no book of its kind is more accurate than the Medical Register. We have, then, to consider 28,572 circulars to which 15,229 replies were received—i.e., the percentage of the constituency which took part in the election was 55·26. But 562 out of these rendered their votes invalid by disregarding instructions, and that seems to us far too high a percentage of carelessness, considering the education of the voters. The cost of the election, which compares favourably with the cost on previous occasions, is worth attention, for it is not infrequently urged upon us that the quick and proper way of bringing certain things to the notice of all medical men is to issue a circular. Dealing with the English constituency alone the cost of the election was £373, not inclusive of the mass of extra work due to the necessity for conducting the operations between two specified and adjacent dates. For this extra work a modest grant was voted to those concerned, with the result that the total cost of the election can be roughly stated at £500. Those who think that a plebiscite of the medical profession ought to be undertaken in all circumstances where it would be convenient to ascertain corporate opinion would do well to consider the cost—as far as England only is concerned—and the probability of getting a substantial reply to any but the most vitally important sort of questionnaire.

ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.—The ninth meeting of the Commission was held at the Home Office on Dec. 4th, when the examination of the representatives of the Hearts of Oak Benefit Society, Mr. Hezekiah Dudley, chairman of the Executive Council, and Mr. J. P. Lewis, secretary, was continued. Various questions relating to transfers of membership, extension of medical benefit, to include specialist service and the desirability of adding dental benefit to the normal benefits of the Act were dealt with. Thereafter the examination of the representatives of the Ancient Order of Foresters—Mr. W. J. Torrance, High Chief Ranger, and Mr. Stanley Duff, secretary—was begun. The oral evidence given at the meeting of Nov. 20th, along with the statement submitted by the Hearts of Oak Benefit Society on which the latter part of that oral evidence was based, is on sale in proof form (3s.) at H.M. Stationery Office.

Annotations.

"Ne quid nimis."

POLIOMYELITIS.

DURING the last 20 years acute poliomyelitis has spread in epidemic form over the globe, and although small epidemics had occurred previous to 1905, it is only since that date that the disease has had its present wide prevalence. In 1912 poliomyelitis was recognised by the public health authorities in England as a definite specific fever and notification was adopted, although the British Isles suffered comparatively little during the epidemic periods. The disease, if not adequately treated, leaves a distressful train of disablement and crippling In 1916 the late Dr. F. E. Batten, when Lumleian lecturer to the Royal College of Physicians of London, discussed the condition, which was then obscure in many of its manifestations, and which had proved on occasion particularly dangerous to our troops (THE LANCET, 1916, i., 809, 829). There are many points in the disease which are still obscure, but in treatment it was recognised then, as now, that the most important factor was rest and prolonged after-care. At the present time treatment of this nature, which involves a protracted sojourn in hospital, is very difficult to obtain when the pressure on hospital accommodation is throughout the country so great. Particularly does this apply to London, and the attention of the Minister of Health has been drawn to the lack of facilities in London for dealing adequately with the after-effects of poliomyelitis in children. In ordinary circumstances the number of cases in any metropolitan borough is small, and would not justify a borough council in making independent provision for a form of treatment which is necessarily costly and elaborate, but the London County Council has started to organise arrangements under which hospital accommodation will be available for children during the later and chronic stages of the illness. The Ministry has therefore issued a circular (No. 338) to the metropolitan borough councils suggesting, as the best way of dealing with the problem, first that all practitioners residing in the area should be reminded of the importance of early diagnosis, and second that coöperation be aimed at with other authorities to send all children affected, whether the condition is slight or serious, to an institution equipped to give such special treatment as may be required to prevent avoidable muscular weakness and permanent deformity. Early diagnosis of poliomyelitis is not easy, and the significance of early symptoms may readily be overlooked. To assist medical practitioners in recognising these early symptoms the Ministry has prepared a memorandum, the substance of which we publish on p. 1250. which should prove of great value in ensuring notification before paralysis appears—the usual stage at which a diagnosis is made. If paralysis occurs, permanent crippling can only be avoided by prompt and long-continued orthopædic treatment. A case presenting the unusual feature of massive collapse of the lung is reported elsewhere (see p. 1222) by Dr. J. C. Regan, occurring in the Kingston Avenue Hospital, New York City.

CANCER OF THE ŒSOPHAGUS.

MALIGNANT growths of the œsophagus are, by reason of their situation in the middle of the thorax, perhaps more inaccessible to treatment than are cancers of any other part of the body where such tumours commonly occur. Surgical extirpation is practically impossible and, in the light of our present knowledge, the only methods which offer a prospect of cure are diathermy and radium. Owing largely to the difficulty of determining the extent of the burning when working at a long distance from the surface, and to the impossibility of estimating the thickness of the growth to be treated, diathermy

is still an uncertain and dangerous method. It is doubtful if any complete cures have so far been obtained, but improvement in the permeability of the stricture has resulted; on the other hand, the resulting contraction of the fibrous tissue has been known to increase the stenosis, although apparently delaying the progress of the tumour, and fatal results have occurred from perforation into the mediastinum and pleural cavities. Nevertheless, when dealing with a fatal and otherwise incurable disease, dangerous methods are justifiable, if they can be shown to cure, or even to alleviate or delay the progress of, a proportion of cases. The application of radium can be more accurately limited, and is probably a safer method, though, with this remedy too, perforation has been known to occur.

In his Semon lecture, delivered at the Royal Society of Medicine last month, Dr. Jean Guisez did not mention diathermy, but he sounded a subdued note of hopefulness on the treatment of malignant growths of the œsophagus with radium, of which he has had a large experience in Paris. Before treatment is commenced it is necessary that the patient's general condition be good enough to allow of treatment, and that the neighbouring structures be not involved; this is determined as far as possible by skiagraphy, and a paralysed recurrent laryngeal nerve is generally considered as a contra-indication. The stenosis must also permit the passage of a No. 20 or 22 bougie, as this is equivalent to the size of the radium-bearing tube. Dr. Guisez holds that œsophagoscopy is absolutely necessary for diagnosis, and in all cases treated by radium he removes a portion of the growth for microscopical examination. The distance of the cancer from the teeth is accurately measured during the œsophagoscopy, and the radium is applied by means of two or three tubes fixed in file on a long sound. He employs a total of 100 to 120 mg. of radium bromide with thick screens of 1·5 mm. of platinum, so as to allow passage only of the gamma rays, and he gives five or six applications of 12 hours each, administered every other day. During the last 15 years he has treated 270 cases of cancer of the œsophagus by radium applications. In 30 cases the patients have survived for over 18 months, and four have died from other causes; the growth has not reappeared in two cases for 11 and 10 years respectively, in one case for five years, in four for four and three years, and in 12 cases for 18 months. The disappearance of the tumours is watched through the œsophagoscope. Dr. Guisez states that generally no trace is left, referring presumably to those cases just mentioned, and he also finds that his later results are better than the earlier ones. Disappearance, more or less complete, of the growth has thus been found to take place in 19 cases out of a total of 270—that is, in approximately 7 per cent., and a varying degree of palliation has been obtained in a further 30 cases, thus giving some improvement in about 18 per cent. of patients found suitable for this method.

As a large number of cases of œsophageal cancer are unsuitable for treatment by radium, by reason of the tightness of the stricture, the invasion of neighbouring structures, or bad condition of general health, the total results fall far short of these figures; but when we consider the great difficulties inherent in the treatment of tumours of this region, a certain degree of encouragement must be found in Dr. Guisez's thorough and careful work. Until recently any curative treatment of this disease was beyond the range of practical endeavour.

IMPROVED HEALTH CONDITIONS OF MAURITIUS.

WHEN, in 1921, Dr. Andrew Balfour made an adverse report on sanitary conditions in Mauritius it will be remembered[1] that between 3000 and 4000 persons in the island were falling victims to endemic malaria every year. Again, the death-rate of children under 5 in 1918 was over 300 per 1000 births. Dysentery and enteric fever were rife throughout the island, spread doubtless through surface contamination of the shallow wells which formed the water-supply of many parts. Dr. Balfour found no difficulty in accounting for the shocking vital statistics. He was dismayed by sights, smells, and noises which showed that not even the most elementary precautions were being taken in the interest of the public health. Flies infested the market-places; dogs had free run of the garbage and refuse heaps; pigs wallowed in the open sewage pits; and rats ran unmolested from ships moored at the quay-side of Port Louis on to the shore. The inadequacy of the medical and sanitary staff, who had, moreover, insufficient authority and power of administration, was, in Dr. Balfour's opinion, mainly responsible for the delay in carrying out urgently needed reforms.

A minute of a report submitted to the Colonial Secretary in January, 1924, by the late Governor, Sir Hesketh Bell, whose serious complaints of the sanitary conditions had induced the Colonial Office to send Dr. Balfour to Mauritius, shows that considerable progress has been made during the last three years. It will be remembered that a levy of £1,000,000 on the sugar industry provided the funds necessary for reclaiming and canalising land, and reforming the water-supply and drainage systems. The prohibition of the use of human fæcal material as manure on the fields, a vigorous anti-malaria campaign, and the provision of model dwellings for the working-classes have been among the reforms inaugurated. Strenuous efforts to improve the sanitation of Port Louis may be said to have begun in earnest in September, 1921. All authority over services affecting health was withdrawn from the municipality about that time, and the care of the streets, water-supplies, and sanitary services generally was confided to the sanitary branch of the medical department. To the energy and enthusiasm of Dr. T. B. Gilchrist and of his staff and subsequently to the good work done by Dr. Balfour Kirk, Sir Hesketh Bell attributes the reduction in the mortality at Port Louis from 2703 in 1921 to 1738 in 1923, out of a population of about 50,000, to mention only one of the signs of better conditions. The efficacy of the anti-malaria measures taken in the capital is indicated by diminution in the numbers of deaths from this cause from 333 in 1921 to 169 in 1923. It is of interest in the Mauritius medical report for the year ending December, 1923, to note that the death-rate for the whole colony (28·5 per 1000) is the lowest since 1891, and for Port Louis the rate (34·1 per 1000) is the lowest since 1880 (33·5 per 1000). It will be seen that under Sir Hesketh Bell's administration a quite promising start was made, and his successor, coming direct from the Colonial Office, will be able to carry on and extend the good work with full appreciation of the ideals to be attained.

[1] THE LANCET, 1921, ii., 1381.

CHRONAXIE.

AN account of his researches on the chronaxie of muscle and nerve in man, in health and disease, has just been published in the form of a monograph[1] by Dr. Georges Bourguignon. The chronaxie is determined by stimulating the muscle or nerve with measured galvanic currents, and attention is paid, not to the presence or absence of contraction of the muscle or the type or strength of contraction, but to the strength and duration of the current which produces the minimal response of the excited tissue. It has been shown during recent years that the stimulating power of the galvanic current depends not only on the strength of the current but also on its duration. Within certain limits a weak current flowing for a long time has the same power as a strong current flowing for a short time. When the current duration is progressively lengthened the

[1] La chronaxie chez l'homme. By Dr. Georges Bourguignon, Chef du Laboratoire d'Electro-radiothérapie de la Salpêtrière. Paris: Masson et Cie. 1923. With 50 figures and 192 tables. Pp. 417. Fr.35.

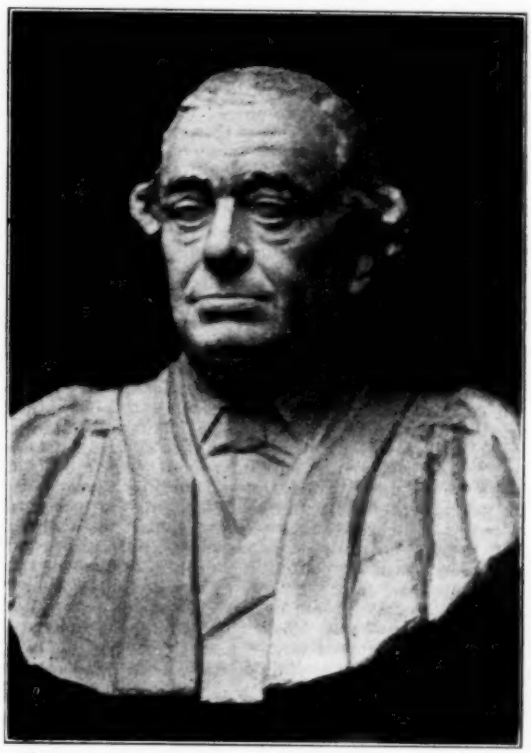
current strength can be progressively weakened until a certain limit is reached at which further weakening of the current will not produce a response however long its duration. The minimum strength of current which produces the minimal response when the current flows for a so-called infinite duration is known as the rheobase. The rheobase differs in different muscles and even in the same muscle at different times, its value depending not only on the condition of the muscle, but also on its depth below the surface and the condition of the overlying skin and the position of the testing electrode. It gives no information of clinical value, but it must be determined before the chronaxie can be measured. To measure the chronaxie, say, of a muscle, the testing electrode is placed on the motor point and the rheobase is found. Then, without moving the electrode, the current representing the rheobase is doubled. The muscle, therefore, gives a stronger contraction. The duration of the current is now progressively diminished until a minimal contraction is once more obtained. The duration of the current which produces the minimal response when the rheobase is doubled is called the chronaxie. The value of knowing the chronaxie lies in the fact that the current is measured and that disturbing factors arising from the conditions of the test are eliminated. Currents of measured duration are applied when condensers are used for testing, but if the strength of the current is kept at a fixed value (as was the case in the methods hitherto used) the results are fallacious because the complications arising from the variability of the rheobase are not avoided. Dr. Bourguignon makes use of condensers of different capacity in order to obtain currents of different duration, and he finds this method more serviceable than that in which a special instrument, known as a chronaximeter, is used. But he takes the precaution of determining the rheobase before using the condensers. The chronaxie of normal muscle in man is very short, from 0·00016 to 0·0008 sec., and that of flexors is shorter than that of extensors. In muscles showing the reaction of degeneration the chronaxie is lengthened from 30 to 100 times. Dr. Bourguignon has studied the change of the chronaxie of muscle during degeneration and regeneration of the nerve, and has noted the evolution of its lengthening and subsequent shortening. His work is based on the researches of Lapicque. That part of it which deals with the human subject in health will be of interest to the physiologist. With regard to paralysed muscle, it is likely that the determination of the chronaxie will give more accurate information regarding diagnosis than can be obtained by testing the electrical reactions by the customary method. It remains to be seen whether information of clinical value regarding the progress and prognosis of a case can be obtained by study of the changes in the chronaxie.

BLOOD REACTIONS IN ANÆSTHESIA.

IN the October number of the *British Journal of Anæsthesia* is a long paper on Blood Reactions in Anæsthesia, by C. D. Teake, assistant professor of pharmacology in the University of Wisconsin. The general opinion that during anæsthesia there is reduced alkalinity of the blood is confirmed, but Haldane's explanation of this as a result of acapnia is refuted. The conclusion arrived at as regards ether anæsthesia is that the immediate and marked fall in bicarbonate is independent of respiratory variations under the influence of ether, and is not caused by the formation of ketone bodies nor by lactic acid. There may be a ketosis developing several hours after withdrawal of the ether, due probably to deranged carbohydrate metabolism, which is apparently related to the depressing effect of ether on the normal insulin secretion of the pancreas. The interesting practical observation is made that the administration of insulin quickly and effectively clears up post-operative acidosis. Anoxæmia as a factor influencing the acid-base equilibrium can be excluded from ordinary ether and chloroform anæsthesia, but is most important in nitrous oxide and oxygen or ethylene-oxygen anæsthesia. There is always some reduced oxygen saturation of the arterial blood in nitrous oxide-oxygen anæsthesia. The suggestion is put forward, owing to experimental evidence recently obtained by the writer, that the cause of acidosis in ether anæsthesia is related to phosphorus metabolism.

THE LATE THOMAS RICHARD JESSOP.

Lady Moynihan, wife of Sir Berkeley Moynihan, recently unveiled a bust of her father, the late Mr. Thomas Richard Jessop, F.R.C.S., which has been presented to the Leeds General Infirmary by his widow, Mrs. Jessop. The name of Thomas Richard Jessop will long be remembered in Yorkshire, for he was for 33 years, from 1870, a member of the infirmary staff, and was a distinguished link in the long chain of able men who have built up a great tradition of surgery at Leeds. The bust is a strong and dignified piece of



THOMAS RICHARD JESSOP.

work in marble from the hands of Mrs. Quirk. Jessop of Leeds had a career of unbroken professional success. The surgeons of his day were resourceful, self-reliant, courageous, and untiring, for their work ranged generally over their science and art, while Jessop was typical of even an earlier race, for while he was the best operator in Leeds he remained in general practice. Born at Brighouse, educated at Giggleswick and Leeds, Jessop was a true Yorkshire product. After apprenticeship at Brighouse he became a pupil of the well-known Nunnerly of Leeds, and immediately upon qualification became house surgeon to the Leeds General Infirmary. From this post he went as surgeon to the Leeds Public Dispensary, while in connexion with the School of Medicine he was appointed lecturer on practical surgery. When that school was amalgamated with Yorkshire College he became a professor, but throughout the whole course of his professional career he

accepted consulting work in medical, surgical, and gynæcological cases without distinction. He was to the end, and so styled himself, "a general consultant." For a long period he was on the Council of the Royal College of Surgeons of England, being senior Vice-President in 1901, in which year he delivered, as the Bradshaw lecturer of the College, a record of his own operative treatment of renal calculus. He was a strong personality, robust in thought, and decided in action, but full of kindliness, and all who knew him admired him for his great gifts. This journal was often beholden to him.

CHRONIC HEPATITIS.

APART from pigmentary disturbances (jaundice) or massive disturbances of conformation, which are usually the result either of acute or of very advanced disease, derangement of the liver produces signs and symptoms of such obscurity that progress in the early diagnosis of hepatic disease is slow. Evidence continues to accumulate, however, which tends to show that inflammatory changes in the liver occur with much greater frequency than has been suspected. This evidence is derived partly from experimental studies in animals, but more especially from the examination of sections of liver tissue removed during operations on the abdominal viscera. We have recently received an interesting reprint of the third series of Beaumont Lectures,[1] which summarises very clearly our present knowledge concerning these pathological processes. The book is in two main sections. Part 1, by Dr. C. G. Heyd and Dr. J. A. Killian, professors of surgery and of biochemistry at the New York Post-Graduate Medical School, deals with the clinical pathology and physiological chemistry of the liver in especial relation to chronic disease of the appendix and gall-bladder. Dr. Heyd calls attention to certain complications occasionally arising after operations on the gall-bladder which are not explicable as due to hæmorrhage, shock, embolism, or peritonitis. He recognises three more or less distinct groups. The first consists of obese subjects, who, after a comparatively simple operation on the gall-bladder, remain in a semi-unconscious condition, and, after a short period of delirium, sink into coma. Examination of the blood and cerebro-spinal fluid of these cases shows no evidence of renal defect nor of cerebral poisoning, and the suggestion is that the state of coma is due to an alkalosis associated with a marked increase in the carbon-dioxide combining power of the blood plasma. The second group includes many patients who have been the subject of long-standing gall-bladder infections, often with previous operations. After two days of satisfactory progress following their operation they become irritable and pass into a state of vaso-motor collapse with cold and sweating extremities. From this state they have often been restored by intravenous glucose administration. Dr. Heyd believes that this complication is due to some pancreatic toxin acting upon a liver whose protective function is temporarily in abeyance. The third group consists of cases with obstructive jaundice in whom operation has relieved the obstruction; at a period of about one week after the operation, at a time when all has appeared well and the jaundice has been diminishing, they have suddenly passed into coma and died, with no evidence either during life or after death of this coma being due to renal deficiency or any of the classical causes of this complication. These cases are believed to be due to the effect of a very slight toxæmia of infective origin acting upon a liver whose function has been materially deranged by long-standing disease. Dr. Killian, in an extensive series of observations has at present been able to discover little tangible biochemical evidence of such disorders of the liver. His studies of the blood-cholesterol, for example, have revealed no excess of this substance in cases of gall-stones unless either pregnancy or obstructive jaundice were present. The nitrogenous constituents of the blood were analysed in another series of cases with hepatic disease, but beyond a suggestive rise in the non-protein nitrogen fraction, nothing of importance was observed. He does, however, lay stress on one laboratory test before operations on the biliary tract—this is the estimation of the alkali reserve of the blood. In some cases the carbon-dioxide combining power of the plasma before operation has been found to be as high as 80 volumes per cent.; in these the post-operative administration of alkalis is strongly contra-indicated and may, indeed, prove disastrous if carried out. The last section of the book deals with the structural changes in the appendix, gall-bladder, and liver of 24 patients of various ages who had been operated on mainly for appendicular inflammation. The evidence of chronic hepatitis in these cases is unmistakable. Peribiliary or interstitial fibrosis in early or late stages was obvious in nearly every case. Inflammation of the gall-bladder was present to some extent in the great majority of cases, though not in sufficient degree to necessitate surgical interference. Prof. W. J. MacNeal, who is responsible for this section, is of opinion that the hepatic inflammation represents the normal physiological protective function of that organ in response to sepsis in the portal region. As to the cholecystitis, he believes that this is the result of infection by the lymphatic system from the liver, though the possibility of direct infection from the bile which is excreting the organisms from the liver remains a second possible cause.

[1] Beaumont Foundation Lectures. London: Henry Kimpton. 1924. 18s.

SYPHILIS AND PERMISSION TO MARRY.

THE problem indicated by this heading has long been with us, but new side issues have recently developed in connexion with the latest advances in the diagnosis and treatment of syphilis. We also know much more about the prognosis, the chances of marital infection in the various stages of syphilis, than did an earlier generation. It is interesting for a moment to hark back to the conditions which A. Fournier, a representative of an older generation, considered necessary for a medical man to insist on when consulted about the prospective marriage of a syphilitic. He stipulated for the absence of recent manifestations, an advanced stage of the disease without signs of activity, a considerable interval since the last appearance of symptoms and adequate specific treatment. The modern criteria by which a syphilitic should be judged fit to enter into the bonds of matrimony have recently been discussed by Dr. Marcel Pinard, of Paris, in *Bruxelles Médical* for Oct. 5th. He insists that when syphilis is recent or neglected, marriage almost inevitably entails infection of one partner by the other. When the infection is of old standing, he finds that the chances of one partner infecting the other depend largely on the sex of the partner first infected. If it is the woman who is suffering from tertiary syphilis at the time of marriage she is not likely to infect her husband. But if it is the man who is suffering from syphilis in the tertiary stage at the time of marriage, he will very likely infect his wife through his semen, the uterus, Fallopian tubes, or peritoneum being the site of the primary infection which escapes detection. In such a case the woman's blood may give a positive Wassermann reaction, and, with little or no evidence of primary and secondary lesions, she may develop tertiary manifestations and suffer from aortitis and high arterial blood pressure, as well as passing the disease on to her progeny. Having commented on these more or less general rules with regard to the sex differences of syphilitic infection, Dr. Pinard proceeds to defend the practice, which he has followed since 1918, of giving his consent to marriage only when the employment of every modern diagnostic device has failed to show any sign of the disease. There must be no clinical or serological evidence of syphilis, an examination of the cerebro-spinal fluid must be negative, there must be a negative serological reaction after arsenical reactivation, there must be an interval of a year of absolute latency of the disease since treatment was given for

primary syphilis, and this interval must be one of two years if specific treatment was instituted at a later stage. Dr. Pinard has never found this high standard fail him, though he admits that keeping to it may not provide an absolute guarantee that infection will not occur. He is not in favour of relaxing this standard, but if the prospective bride or bridegroom refuses to wait till all these conditions have been fulfilled, he suggests that, as the next best course, the medical examiner should urge the patient to be perfectly candid with his or her prospective partner, so that steps may be taken to continue the cure of the one partner, and prevent the infection of the other. In parts of Scandinavia medical examinations of candidates for marriage have become compulsory, and while Dr. Pinard does not plead for legislation in France in this manner, he considers it desirable that such medical examinations should be a matter of routine, of general custom. He relates many instructive incidents connected with his work as medical examiner of persons about to wed, and one of his points is that it pays the betrothed to be candid with each other before matrimony. We ought not to be surprised by the account given by Dr. Pinard of a man, who confided his secret to his fiancée, a lady belonging to a good provincial family. Her reply was: "Syphilis is no obstacle; I know what it is, father has it." But candour on one side met by ignorance on the other may spell disaster.

THE TREATMENT OF FEMORAL HERNIA.

IT is only of recent years that careful follow-up methods have enabled us to arrive at a true estimate of the success of operations for hernia. The optimistic outlook which prevailed received a rude shock during the war, when with many inexperienced operators at work the proportion of recurrences certainly reached a high figure. But that all these relapses were not due to lack of skill in the operators, but were to some extent inherent in the procedures in vogue, seems to be proved by the study of series of cases done in large clinics where the technique employed is certainly not below that standard which is expected from a well-trained experienced surgeon. If such groups of cases are followed up, there is a percentage of recurrence varying from 7 to 10 in inguinal hernia operations upon adults. These results bid fair to be improved upon, as the knowledge of the factors which tend to cause recurrence becomes more widespread. There has been for long a general impression that failure to cure is more likely with a femoral than an inguinal hernia, the belief being held that the rigid margins of the crural ring are more difficult to approximate and keep in apposition. This does not appear actually to be the case, for L. F. Watson[1] finds that recurrence after the operation from below amounts approximately to 4 per cent. in 469 cases. It is now becoming very general in a number of clinics to operate upon femoral hernia by the inguinal route. To T. Annandale must be given the credit for first deliberately attacking the hernia in this way in 1876,[2] but an Italian surgeon, G. Ruggi, in 1892, and G. Lothiessen, in 1898, exploited and popularised the inguinal method. This operation has certain advantages. The neck of the sac is thereby approached higher up and closure of the crural canal from above would seem to be more sure and easy. Nevertheless the figures given by Watson reveal a greater liability to recurrence after the inguinal than after the femoral operation, 4·8 per cent., compared with 4 per cent. Elsewhere in this issue Mr. F. Harvey relates his experience with the operation devised by Roux in 1899, in which the pubic attachment of Poupart's ligament is extended outwards by means of a metal staple. Of 46 cases traced by Mr. Harvey, recurrence only occurred once, giving a rate of just over 2 per cent. This is a strikingly good result and deserves attention as the method is a simple one. It might be thought that there would be objections to leaving a metal staple permanently embedded in the pubes, but it does not seem to lead to any trouble. E. Hey Groves[3] described another method for shifting outwards the inner attachment of Poupart's ligament without tension. His results were equally remarkable, 23 traced cases without a recurrence, of whom three had gone through a pregnancy subsequent to the operation. It would seem that the time has come to review the question of the operative treatment of femoral hernia and particularly to assign the inguinal operation its proper place. It is so attractively conceived and so efficiently designed for achieving its purpose, that surgeons will not feel inclined to abandon it until an investigation of the cases on which the statistics are based has been carried out, or the publication of further statistics confirms the above-recorded results.

[1] L. F. Watson: Hernia. London: Henry Kimpton. 1924.
[2] Edin. Med. Jour., 1875–76, xxi., 1087.
[3] Brit. Jour. Surg., 1922–23, x., 529.

THE LATE DR. ALEXANDER LEWERS.

No words could have been more appropriate for the memorial tablet in the entrance hall of St. Vincent's Hospital, Melbourne, in memory of the late Dr. Alexander Lewers than those which, taken from Dr. Lewers's own writings, have been engraved on a simple brass tablet: "However Untimely the Fate of These and Such as These, Their Effort is Not Vain." Nor could the place have been more fitting, for a large part of the most active portion of his life was associated with the St. Vincent's Hospital, where, as the memorial states, he was senior physician from 1908 to 1922, and where he filled every position of honour, as clinical teacher and lecturer, chairman of the staff, and dean of the clinical school. To his wisdom the hospital owes much. Dr. Lewers received his early medical education at St. Mary's Hospital, London, and was for a time medical officer at Adelaide Hospital. After a post-graduate visit to England, during which he studied dermatology under the late Sir James Galloway and obtained a Diploma in Public Health, he returned to Australia and treated the first case of bubonic plague at the quarantine station at Coode Island. Dr. Lewers, to whose merits we were able to bear testimony at the time of his death some 15 months ago, was editor of the *Australian Medical Journal* for several years and was the Australian correspondent of THE LANCET.

CROWN GALLS.

THE cancer problem, and the problem of neoplastic growths in general with which it is inseparably linked up, has far wider bearings than its pressing relationship to human pathology, and neither the general reader nor the research worker can afford to neglect kindred conditions in animals and in the vegetable kingdom. One of the most interesting phenomena of this nature in the latter is that of the "crown gall." These tumour-like formations upon plants have been largely studied in America and especially carefully described by Erwin F. Smith.[4] It would appear that their bacterial origin is incontestable. From the large nodosities which go by this name, and whose most common site is at the junction of root and stem in plants, an organism may be regularly isolated to which the name of *Bacterium tumefaciens* has been given. This is a small, Gram-negative, motile bacillus which, on inoculation in pure culture, has the effect of reproducing tumour-like masses in a number of vegetable species which are indistinguishable from those appearing spontaneously. The work of investigating these growths has been recently taken up in France by J. Magrow,[5] who has in many directions confirmed the observations previously published in Copenhagen, Prague, and America. By means of a culture of *B. tumefaciens* derived from the stocks of the

[4] THE LANCET, 1922, i., 160.
[5] J. Magrow: Recherches expérimentales sur le cancer des plantes, Annales de l'Institut Pasteur, October, 1924.

Pasteur Institute, tumours have been produced in a large proportion of the plants experimented upon, their localisation being either at the junction of root and stem, at the base of a leaf, or in the leaf stalk, according to where the inoculation was made. A considerable variety of plants is susceptible. The growths, which are made up of small imperfectly differentiated cells, are derived from those elements in the plant which are naturally endowed with marked proliferative ability, and the neoplasm when it is once inaugurated pursues a progressive course, infiltrating, compressing, and destroying the tissues, and finally producing in the plant a state of malnutrition or "cachexia." The chief point upon which Mr. Magrow has been unable to confirm other workers' observations is in regard to the occurrence of "metastatic" growths, but he notes that his strain of *B. tumefaciens* lacked pathogenicity for *Anthemis frutescens*, which is the most favourable plant for their observation. It would appear that the several strains of this organism which are in existence vary a good deal in their pathogenic ability. Although readily cultivable from the lesions, the organism cannot be demonstrated with certainty within the growth. This may be due to their being present in the tumours in very small numbers, or to technical difficulties in demonstrating them in vegetable tissues. The whole matter of these growths and their close simulation of malignant disease in man and animals is one of great interest in general pathology and deserves to be widely studied.

PSEUDOMYXOMA PERITONEI.

IN a paper read before the Chicago Gynecological Society, Dr. Emil Ries,[1] professor of gynæcology in the Post-Graduate Hospital and Medical School, Chicago, who reports two illustrative cases which came under his observation in the course of 16 years, states that pseudomyxoma peritonei is a secondary condition, due to escape of gelatinous material from a primary tumour arising in the ovaries, appendix, or both, or more rarely in other organs. The ovarian tumours are always pseudomucinous cystomata in their entirety or at least partially. The appendices from which pseudomyxoma peritonei starts are found to be more or less cystic, often show diverticula, and may contain papillomatous tumours. Previous attacks of appendicitis have been frequently noted in the cases which originated from the appendix alone. Some writers maintain that the pseudomyxoma peritonei originating in ruptured ovarian tumours is much more liable to continue even after careful operation and to cause death, while the pseudomyxoma following ruptured cyst of the appendix is less dangerous. Examples of recurrence and death, however, as well as cases of apparent cure by operation, have been recorded, whichever the original source of the pseudomyxoma may have been. Operative treatment consists in the removal of the original source and the treatment of the pseudomyxoma. Ovarian tumours should be removed whether they are ruptured or not, and since many of these tumours are more or less intraligamentary hysterectomy may also be required. The appendix should be removed whether it is much enlarged or not, whether or not it shows diverticula or forms a ruptured or closed cyst. When it is so firmly imbedded in the gelatinous material that it cannot be isolated, as in a case reported by Hartmann, resection of the cæcum may be required. The results of operation have been good, even though the entire gelatinous masses on the parietal and visceral peritoneum have not been removed. Repeated operations have been performed in a number of cases, and recoveries for longer or shorter periods have taken place. The longest reported time of cure is that of Dr. Ries's first patient, who was alive and well 17 years after an operation at the age of 55 for ruptured ovarian pseudomucinous cystoma, and ruptured cyst of the appendix with papilloma.

[1] Surgery, Gynecology, and Obstetrics, November, 1924.

Obituary.

SIDNEY JOHNSON TAYLOR, M.D. EDIN., M.R.C.S. ENG.

BY the recent death at the age of 67 of Dr. S. Johnson Taylor, of Norwich, the medical profession has lost an experienced and skilful practitioner, who for a long time played a prominent part as an ophthalmic surgeon, not only in Norwich and the surrounding district in which he practised, but also in the various societies and congresses connected with ophthalmology.

Sidney Johnson Taylor received his medical education at St. Thomas's Hospital, London, and Edinburgh University, and also pursued the special study of diseases of the eye in Vienna. He took his M.R.C.S. in 1878, and his M.B. and C.M. Edin. in 1882, being co-equal in competition for the Ettles Scholarship. He also won the Musgrove Scholarship at St. Thomas's Hospital. In 1922 he obtained the M.D. Edin. He was for a time resident medical officer to the Severn Tunnel Hospital, and subsequently engaged in general practice at St. Servan, near Dinard, in Brittany. Deciding to take up ophthalmic surgery as his specialty, he returned to Edinburgh, worked under Argyll Robertson, and then obtained the post of clinical assistant to the Royal London Ophthalmic Hospital at Moorfields, where he profited from the teaching of Nettleship. Later he settled in Norwich, where his knowledge and skill in dealing with diseases, defects, and injuries of the eye secured him a well-merited reputation. He became a member of the Ophthalmological Society of the United Kingdom in 1889, and for 30 years was a regular attender at its meetings and the contributor of many valuable articles to its Transactions. He was thorough in his diagnostic investigations, well read in the literature of his specialty, and a skilful operator. His genial and considerate nature not only inspired the confidence of his patients, but secured their lasting friendship.

The death of his son, Charles Murchison Johnson Taylor, was his great grief in his later years, and to his memory, as also to that of his own old teacher, Charles Murchison, F.R.S., M.D., after whom the son was named, he last year presented Moorfields Hospital with the sum of £1000 for the endowment of a bed.

THE LATE DR. JOHN ROBSON.—John Robson, M.D., F.R.C.S. Edin., who died in his eighty-second year on Nov. 28th at Guildford, Surrey, where he had resided for some time, was well known in the Rock Ferry district, near Liverpool, where he carried on an extensive practice. He went to Rock Ferry over 40 years ago, and retired from active practice after 20 years' work there. About 30 years ago he lost his two daughters, who were drowned at Corwen.

THE LATE DR. G. D. COMPSTON.—George Dean Compston, M.R.C.S. Eng., of Halton, near Leeds, died on Dec. 2nd in London in his thirty-eighth year. He was the second son of Mr. J. A. Compston, K.C., the Recorder of Leeds. He had been ill for a considerable time and underwent an operation at Hastings last August. After taking his B.A. at Cambridge, he studied medicine at Cambridge and at Middlesex Hospital, becoming M.R.C.S. and L.R.C.P. in 1913. He acted as house surgeon in Middlesex Hospital, as assistant medical officer at the London Fever Hospital, and in Hastings, where he began practice, he held public medical appointments. Later, in Leeds, he served on the staff of the Leeds Women and Children's Hospital. When in practice in Hastings and during the war, Dr. Compston served with the R.A.M.C. with the rank of captain, and after service in Mesopotamia he suffered from severe dysentery. At Cambridge he was distinguished in rowing circles and was awarded a rowing "blue," being cox in the Cambridge boat in 1909. He married in 1914 and leaves a widow and two sons.

THE house and library of the Royal Society of Medicine will be closed from the evening of Tuesday, Dec. 23rd, until Monday morning, Dec. 29th.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

C.—TREATMENT OF TUBERCULOUS PERITONITIS.

TREATMENT in tuberculous peritonitis, as in other tuberculous lesions, tends to become more and more conservative. This follows the acceptance of the theory that in most cases of surgical tuberculosis the disease is a local manifestation of a general systemic infection. A. Rollier considers tuberculous peritonitis to be almost always consecutive to pulmonary, pleuro-pulmonary, or pleural lesions.[1] He is strongly opposed to operation in this disease, on the ground that it "may produce a locus minoris resistentiæ and a depression of general health which not infrequently results in renewed pulmonary activity." Unfortunately, the ideal is not always attainable; operations are performed from time to time either deliberately or accidentally—deliberately in order to evacuate fluid in the ascitic variety or to meet some emergency such as intestinal obstruction in the fibro-adhesive variety; accidentally, as the result of a mistaken diagnosis.

Tuberculous peritonitis requires a more exact classification. A wide distinction may be drawn between primary and secondary conditions. Among the primary can be included the miliary type with ascites and the fibrous adhesive type, which I look upon as a later stage of the ascitic following the absorption of the fluid, a stage of partial cure. These cases are systemic in origin. Among the secondary conditions peritonitis may follow tuberculous enteritis, or sometimes tuberculous salpingitis, ileo-cæcal tuberculosis (the entero-peritoneal type of Hartmann), and the large class of caseous tuberculosis which may be regarded as a late stage of mesenteric gland tuberculosis. It is doubtful whether these secondary infections are systemic at all; they may be looked on as local implantations of tubercle operating through the intestinal tract; especially is this probable in the case of mesenteric gland tuberculosis which is comparable with tuberculosis of the cervical glands. If this view is true it justifies operation in the secondary types, while limiting operation in the primary types to the relief of intestinal obstruction. It is true that cœliotomy has had many successes in the ascitic form, and it may still have its place where the modern conservative methods are not available.

Conservative Treatment of Uncomplicated Tuberculous Peritonitis.

The preliminary examination of cases of uncomplicated tuberculous peritonitis is on the same lines as for all abdominal conditions. A thorough investigation is necessary to exclude sepsis in the nasal passages (rhinitis or sinusitis), in the pharynx and naso-pharynx (and this may necessitate the removal of adenoids or septic tonsils), and in the mouth (dental caries). The examination of the lungs is especially important and it is well to estimate the Wassermann reaction. The stools should be investigated for evidence of undigested food and occult blood.

When any septic foci have been removed or excluded, the patients are confined to bed, "simple recumbency" in Sir Henry Gauvain's phrase, or as Rollier suggests in the acute stages, "immobilisation in the dorsal position." The diet should be regulated to avoid all materials liable to irritate the intestine.

Graduated sun treatment as employed at Leysin is then used. This consists in a very gradual exposure to sunlight, the ultra-violet rays of which, while they have very little penetrative power, are strongly bactericidal and in addition appear to increase the power of the blood to destroy disease-producing organisms, at the same time increasing the calcium metabolism. Gauvain's instructions for this treatment are as follows:—

1st day	Expose legs to knees for 5	minutes hourly for three successive hours.
2nd	 10	
3rd	.. .. .. groins .. 10	
4th	Expose legs and buttocks for 20	
5th ..	In addition one aspect of the trunk for five minutes.	
8th ..	Total exposure for 20 min. hourly for three successive hours.	

The exposure is regulated by the amount of pigmentation, it being understood that patients who will not pigment or only freckle, require much more care than those that pigment well. Eventually a total exposure of two to three hours a day may be obtained, the greatest care being taken to protect the head and to prevent blistering. The coincident exposure to cold air increases metabolism, which is still further increased if sea-bathing is added. The very young, and aged and infirm patients, require special care. Rollier says that the sun treatment produces its best results in the ascitic type, but in the caseous type a congestive reaction accompanied by vomiting and fever may result. Gauvain says that uncomplicated cases almost invariably do well, that the fibrous adhesive type often obtains rapid and permanent benefit, and that such complications as intestinal obstruction are very rare at Alton.

X ray exposures may be employed in the absence of sunlight. The abdomen is divided into quadrants, only one being irradiated at a sitting with an interval of five to six days. This treatment is valuable in the fibrous adhesive type, but is of little benefit in acute forms.

Alternatively the *mercury-vapour lamp* may be employed, it being remembered that at a distance of one metre its ultra-violet intensity is over three times that of the sun. This is increased in a hot room and diminished in cold, and erythema is easily produced.

Tuberculin.—Opinions are divided as to the value of tuberculin. Rollier has almost abandoned it, but others use it, though not in acute cases. It is usual to start with a minimal dose, 1/10,000,000 mg., progressively doubled at five-day intervals, till 1 mg. is reached. This dose is then given at fortnightly intervals for a year. If there is no pyrexia the initial dose may be 1/10,000 mg., but it is important to take regular readings of the temperature in the rectum.

Operative Treatment.

Operative treatment of tuberculous peritonitis concerns itself mainly in dealing with complications, of which the most common is intestinal obstruction. From time to time one is called upon to treat the ascitic type, and surgical measures generally meet with immediate success. Operation must be accepted, however, merely as one step in the treatment; the aim is to evacuate a fluid of low bactericidal power in the hope that it will be replaced by a temporary serous effusion of a higher bactericidal power. The operation consists of a cœliotomy, the evacuation of the fluid, the removal of any local primary cause—e.g., appendix or Fallopian tube, and closure without drainage. All ligatures and sutures must be of catgut. In a short series of 17 consecutive cases operated upon by me for tuberculous peritonitis which I have collected for the purpose of illustrating this article, I include two ascitic cases. There were three other cases where miliary tubercles were found during the course of operations done for various reasons, in only one of which free fluid was found. All these five cases were in females and all did well. As to the fibrous and caseous types there were nine cases of intestinal obstruction, of which seven resulted from

[1] Heliotherapy. Oxford Medical Publications. 1923.

adhesions and two from intestinal ulceration. Of the seven adhesion obstructions, five occurred in females and all recovered in spite of the fact that intestinal resection was necessary in one case and a lateral anastomosis in another; two occurred in males and both died, one shortly after operation, the other in three weeks, and in both cases obstruction had been present for a long period. The two intestinal-ulceration obstructions were treated by resection, a male in whom obstruction had been present for six weeks dying, a female operated on for acute obstruction recovering. Operation in these fibrous or caseous cases, where obstruction is present, is very difficult. There is the risk of injuring adherent intestine in opening the abdomen, and the most gentle handling is needed in releasing adhesions in order to avoid tearing the gut, an accident which frequently leads to fistula and causes a high mortality. If, in addition, it is necessary to do a resection or a short circuit, the chance of a successful issue is still further reduced. They are operations of necessity and not of choice; they are not done in the hope of curing the peritonitis, but to relieve a complication, and their value must be judged from this standpoint.

There are two other conditions which may give rise to tuberculous peritonitis secondarily. The first is

Tuberculous Disease of the Mesenteric Glands.

Three stages of development are recognised, a tuberculous enlargement, caseation, and calcification. It is in the stage of caseation that most of the complications arise, the serous covering becoming affected, leading to adhesions, and, if the gland burst, the abdomen may be flooded with caseous material, leading to localised abscesses, or diffuse peritonitis. This is the stage known as the caseous stage of tuberculous peritonitis, really a misnomer, for it is, I believe, a late stage in mesenteric gland tuberculosis, rather than a late stage in tuberculous peritonitis. These conditions are the despair of the surgeon who must, on occasion, operate for the relief of some urgent catastrophe, such as obstruction. Success lies in the early diagnosis of mesenteric gland tuberculosis and adequate treatment.

During the period covered by the series of 17 cases quoted above, I have operated upon 68 cases of mesenteric gland tuberculosis with a mortality of two, both late cases requiring resection. One of these died soon after the operation, the other a few weeks after of pulmonary phthisis. Three cases had intussusception and all did well. The operation consists of a laparotomy in the middle line below the umbilicus. The ileo-cæcal mesentery, a favourite site for these glands, is examined first and then the mesentery of the ileum, it being remembered that the most infected gland may be high up in the root of the mesentery. Attack is directed to the caseating glands, which are deliberately dissected out, the serous covering being preserved as far as possible. There is little, if any, risk of so damaging the mesentery that the viability of the intestinal coil is endangered, but the incision in the serosa must be sutured with the finest catgut after careful hæmostasis to prevent subsequent adhesions. The appendix is removed and the abdomen closed.

Ileo-cæcal Tuberculosis.

Ileo-cæcal tuberculosis in its entero-peritoneal form may also lead to tuberculous peritonitis. This variety is not well suited to operative measures, except in its early stages, and results do not compare with those obtained in the hyperplastic form. In the series of 17 cases there were three successful cases of ileo-cæcal tuberculosis, but in none was the peritoneum much affected. The treatment is a block resection of the cæcum with the lower six inches of the ileum.

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Senior Surgeon, Prince of Wales's General Hospital, London.

Special Articles.

THE EARLY DIAGNOSIS OF ACUTE POLIOMYELITIS.

THE early diagnosis of acute poliomyelitis by furnishing the indications for timely treatment is a strong factor in obviating the sequelæ of permanent crippling and disablement that too often follow the disease, but the first indications of poliomyelitis often pass unobserved as the condition is of comparatively infrequent incidence as compared to the commoner infections of childhood. As an aid, therefore, to early diagnosis, the Ministry of Health has issued a memorandum[1] for the use of medical practitioners which sets out, clearly and simply, the chief features of the epidemiology and early manifestations of the disease, as follows.

Features of the Disease and its Notification.

Acute poliomyelitis is an infectious disease which attacks the central nervous system and may give rise to paralysis. In this respect it is comparable with cerebro-spinal fever and encephalitis lethargica. The disease has long been known, under the name of "infantile paralysis," as a form of paralysis of which sporadic cases occur, chiefly in children and less frequently in adults. In recent years it has occurred in epidemic form in America, Australia, and in some parts of Europe. The New York epidemic of 1916 was on a scale of considerable magnitude. A number of local outbreaks have occurred in this country. Polio-encephalitis and poliomyelitis were made compulsorily notifiable in London as from March 13th, 1912.

Pathology.

The virus of the disease is so minute that it passes through the finest filter. It attacks the nervous system causing inflammation of the grey matter of the spinal cord, especially of its anterior cornua. In some cases the brain may be primarily or secondarily affected (polio-encephalo-myelitis). The meninges also may be implicated in the morbid process.

Epidemiology.

Poliomyelitis is most *prevalent* in the summer. It appears to have no special relationship to social or sanitary conditions and often occurs in sparsely-populated districts. Clinical evidence points to an *incubation* period in the disease of four or five days, though shorter and much longer incubation periods are recorded. The disease presents an erratic character as regards *infectivity;* this in part may be due to failure to recognise the mild and abortive cases. In some instances the disease has developed after contact of short duration with a patient suffering from poliomyelitis, and multiple attacks in households are not uncommon. In other instances children have been known to sleep in the same bed with a patient and to escape infection. The *fatality* of poliomyelitis varies within wide limits. Commonly 10 to 12 per cent. of the attacks prove fatal, but much depends on the proportion of mild or so-called abortive cases which are recognised. It is important to isolate all patients suffering from poliomyelitis in the acute stage, whether the manifestation of illness be slight or severe. Prompt action in this respect largely minimises the risk of spread of an epidemic.

Symptomatology.

The early manifestations of poliomyelitis give rise to considerable difficulty in diagnosis at a stage of the disease—namely, before paralysis supervenes, when its identification is of extreme importance. Usually an initial febrile attack occurs, the temperature seldom rising above 102°–103° F. This febrile

[1] Note on the Early Diagnosis of Acute Poliomyelitis. London: H.M. Stationery Office. 1*d*.

period is of comparatively short duration, lasting for about two to five days and rarely longer than ten days. A curious hump in the temperature curve, "the dromedary temperature" of Draper, may be observed in some cases. Recrudescence of the fever usually indicates further progress of the disease and paralysis. Commonly there is malaise and drowsiness, sometimes intensified as stupor, accompanied by headaches and occasionally by vomiting; there is often nasal and pharyngeal catarrh or gastro-intestinal disturbance associated with loss of appetite, sickness, constipation, or diarrhœa. Profuse sweating is common; there in no characteristic skin eruption, but eruptions such as herpes zoster, herpes labialis, and erythema are sometimes recorded. The patient is irritable and restless as a rule, especially when roused from somnolence; he may be mentally confused or delirious. Twitchings and tremors are generally observed even in mild cases. Rigidity of the muscles of the neck and spine frequently occurs and the head may be retracted, there may be pain and tenderness of the skin, over the spine and on pressure of muscles and nerves. Retention of urine is common. Convulsions are sometimes met with in young children. Generally, if the patient is carefully watched, an irritative stage (usually indicated by transient nystagmus, twitchings, and paresis of limbs or of groups of muscles) can be recognised prior to the paralytic stage. At this time the knee-jerk may be exaggerated. Definite paralysis, usually of the flaccid type, may follow primary symptoms; it affects one or more groups of muscles, especially of the limbs, but may involve any part of the muscular system. The reflexes are now commonly absent.

Diagnosis.

In some cases the sudden onset of paralysis is apparent, but in the majority the serious nature of the illness at the outset may be obscure. On the other hand, the implication of the medulla, brain, meninges, or special nerves may give rise to additional symptoms, causing possible confusion: thus in bulbar paralysis speech disturbances are noted. In these anomalous cases confusion in the differential diagnosis between poliomyelitis and encephalitis lethargica or cerebro-spinal fever is apt to occur; the latter error is more frequent when the meninges are affected. The meningeal type may also be confused with tuberculous meningitis or septic meningitis. In such cases, the previous medical history of the patient and the presence of other similar cases in the vicinity, together with examination of the cerebro-spinal fluid, may aid the diagnosis. The symptoms of poliomyelitis before the onset of paralysis have frequently been attributed to influenza. Cases at this stage have also been diagnosed as sunstroke, enteric fever, food poisoning, rheumatic fever, and a number of other diseases. In the mild or abortive cases of poliomyelitis in which no paralysis supervenes the symptoms are similar to those ushering in the graver forms. They are often associated with general or localised muscular weakness or gastro-intestinal disturbance. Such symptoms, if they occur in patients having association with paralytic cases, should arouse suspicion.

Fatality and After-effects.

Death in the acute stage of the illness is usually due to bronchitis or broncho-pneumonia, which supervenes through affection of the respiratory centres. Those who recover are liable to permanent paralysis of particular groups of muscles, and it has been asserted that over half the patients who survive an attack of acute poliomyelitis remain crippled to a greater or less extent throughout life.

The London County Council has for some years past made available for medical practitioners the services of one or other of its medical officers in a consultative capacity in suspected cases of cerebro-spinal fever polio-encephalitis, poliomyelitis, and encephalitis lethargica. When necessary a lumbar puncture has been performed and an examination of the fluid made. It is understood that the services of Dr. J. A. H. Brincker and Dr. J. Graham Forbes are available for this purpose and can be obtained on application to the Public Health Department, County Hall, London, S.E. (Tel.: Hop 5000).

INFECTIOUS DISEASES ABROAD.

Outbreak in Japan of a Disease Resembling Encephalitis Lethargica.

IN Japan a serious epidemic has been described of an affection of the central nervous system, which was first reported unofficially as cerebro-spinal fever, later as encephalitis lethargica, later as a hitherto unidentified disease. The first cases occurred in July in the Department of Toyama on the west coast of the principal island. During August the provinces bordering on the inland sea became severely affected, and during September the disease spread over nearly the whole of Japan. The cases officially reported between August 12th and Sept. 29th numbered 6551 and the case-mortality was stated to be 54·8 per cent. In the provinces most affected the onset of the outbreak was sudden and the curve of cases reached its maximum in the last week of August or the first week of September, thereafter declining rapidly. Of 299 cases notified in the Department of Tokushima 185 were among men, 114 among women, and 62 per cent. of the cases were in persons over 50 years of age. Instances in which more than two cases occurred in the same family were rare. A description of the clinical features of the disease forwarded by the Japanese Health Service to the Health Section of the League of Nations,[1] states that the symptoms of the disease resembled those of encephalitis lethargica, but that the usual eye symptoms were absent. The onset was sudden with high temperature; after one or two days there was loss of consciousness and delirium. Death occurred in from five to ten days, or recovery took place with a fall of temperature and return to consciousness. The cerebro-spinal fluid was clear in all cases examined and no pathogenic organism was found. The incubation period in man was indefinite; in animal experiments it was found to be about three days.

Pneumonic Plague in Los Angeles, California.

A somewhat severe outbreak of pneumonic plague, which was at first diagnosed as "malignant pneumonia," recently occurred in this city. The first death occurred on Oct. 19th, and between that date and Nov. 11th there were 38 cases with 31 deaths, all the cases except four being of the pneumonic type. The area affected is limited to a small portion occupied by aliens in the Mexican quarter of the city; a sanitary cordon has been drawn round it and vigorous measures of inspection, fumigation, and rat destruction are in progress under the supervision of officers of the United States Public Health Service. It is reported that the situation is well in hand, and that there is little reason to fear the development of a widespread epidemic.

MEDICINE AND THE LAW.

VALID CERTIFICATES: A MISUNDERSTANDING CLEARED UP.

AN interpretation of the law, mainly of course for the use of foreign countries, has come before the General Medical Council. A paragraph in the Supplement to the *British Medical Journal* of Oct. 4th stated that instructions had been received from the immigration authorities of the United States that in future persons

[1] Reported in the Monthly Epidemiological Report of the Health Section of the League of Nations, No. 72, Nov. 15th, 1924, p. 673.

desiring to emigrate from this country to the United States must be examined by medical practitioners who are members of the British Medical Association. This statement naturally provoked some interest among the members of the medical profession who are not members of the Association, and it was brought to the notice of the General Medical Council.

A letter was written accordingly to the American Consul, pointing out that the instruction appeared to have been given under a misapprehension, for the only persons legally qualified in the United Kingdom to give valid certicates are those whose names appear in the Medical Register. It was asked in this letter that the attention of the authorities in the United States of America might be drawn to the matter, and steps taken to see that certificates given by registered, and therefore legally qualified, persons were accepted whether they were members of the British Medical Association or not. A copy of this letter having been sent to the British Medical Association with an expression of regret that the attention of the Council had not been called to the matter before the announcement appeared, the Association replied that the action of the American Consulate was entirely spontaneous and was not due to any representations from the Association. It was added that any person or body employing medical practitioners would have complete liberty to employ such practitioners as they thought fit, and that no regulation was known which would prevent the American Government, or any other body, from deciding for reasons which seemed to them good to employ only specified practitioners. The Royal College of Physicians of London also drew the attention of the General Medical Council to the matter, and pointed out that the proposed limitation of the right of giving medical certificates to intending immigrants to the United States to medical practitioners who were members of the British Medical Association involved an injustice to those members of the profession who were not members of the Association by prohibiting them from exercising a branch of professional work. The Royal College suggested that the immigration authorities of the United States should be fully informed of the status of the British Medical Association and of the injury which the proposed arrangement would inflict on medical practitioners in this country who were not members of the Association and who would be precluded from giving medical certificates even to intending immigrants who were their own patients, and also of the consequent hindrance to efficient certification as required by the immigration authorities of the United States. The reply of the American Consul to the General Medical Council on Nov. 3rd made it clear that the situation was the result of a misunderstanding. The authorities in the U.S.A., wrote the Consul, never specified that immigrants from England should be examined by members of the British Medical Association. The only stipulation was that the examiners should be qualified and reliable. He added that it was probable that the British Medical Association inferred from a request sent to it for a list of its members that they only would be permitted to examine such immigrants, but the examination was not limited to such members, and the Consulate-General would be glad to give every consideration to examinations made by "your members" (i.e., presumably all registered practitioners). It was not with any intention of discriminating against these others that a list of members of the British Medical Association had been requested.

STOPES *v.* SUTHERLAND: A PETITION TO THE LORD CHANCELLOR.

The principal judgments delivered in the House of Lords in the final appeal in the action brought by Dr. Marie Stopes against Dr. H. G. Sutherland for libel were published at some length in THE LANCET of Dec. 6th (p. 1192). There has since been received here the copy of a petition, presented to the Lord Chancellor by Dr. Stopes, in which she states that the intention of the jury, as explained to her solicitor, since dead, was to find in her favour and to award damages, and that the jury had been dismissed without having the opportunity to explain their intention to the Lord Chief Justice. The petition then states, "your Lordships, therefore, were not acquainted, as you should have been, with the fact that the main stings of the libel (viz., the very serious charges that the methods used at my clinic are harmful and that my propaganda is criminal) were *not* considered by the jury as being matters of fact, but as among the matters of opinion for which damages were awarded to me: the true facts in the libel being that I did found a clinic and did there give information to the poor." Reference to the judgment (THE LANCET, Dec. 6th, p. 1193) will show that the Lord Chancellor, in his judgment, had no hesitation in treating the two matters mentioned by Dr. Stopes as questions of fact, a point which is for the Court and not for the jury to decide. Clearly, also, the House of Lords did not consider the fact that Dr. Stopes founded a clinic and there gave information to the poor to be a matter submitted to the jury as forming part of the matter alleged to be defamatory.

FRAGMENTS OF GLASS IN FOOD AT A RESTAURANT.

In an action tried recently by Mr. Justice McCardie and a common jury, Mrs. Esther Davis, a telephone operator, was awarded £130 damages, with costs, against Messrs. R. E. Jones, Ltd., of Swansea, proprietors of a restaurant in which the plaintiff ate a meal on New Year's Day. A mince-pie was served to Mrs. Davis, who stated that it contained broken glass which at the time made her gums bleed, and which caused her pain in the chest and abdomen on the following day, since which she had had medical treatment. The claim was based, firstly, on the allegation that the defendants were negligent in sending out to their restaurant a mince-pie containing broken glass, and, secondly, upon a breach of the implied warranty on their part that the mince-pie was reasonably fit to be eaten. No evidence was called for the defence, but it was contended that there was no evidence of danger to life, or proof that the plaintiff had, in fact, swallowed any of the glass. Mr. Justice McCardie, in summing up, directed the jury that there was clearly negligence on the part of the defendants and also a breach of warranty. The question of the amount of damages would be affected if they found that the plaintiff had swallowed some of the glass.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

The Irish Free State and the Medical Register.

THE licentiates who received their diplomas last week from the Royal Colleges of Physicians and of Surgeons must have been somewhat puzzled to reconcile the statements made to them by the respective presidents. At the College of Surgeons, Mr. Maunsell advised them to make all speed to the office of the Branch Registrar to register their diplomas, lest the Register should be closed against them. "Closed it will be," he went on, "unless a few broadminded statesmen appear before it is too late." On the other hand, at the College of Physicians, Sir William Thompson announced that he had the authority of the Government for saying that negotiations on the subject of the Register were proceeding between the Irish Government and the British Government, and that there was every hope that they would end satisfactorily. As a matter of fact, it is understood that the only difference between the two Governments is on a matter of phraseology in the drafting of the identical legislation which has to pass in both countries. There is every reason to suppose

that this will be satisfactorily settled as soon as the legal advisers of Mr. Baldwin's Government have time to look into the matter. There appears to be little justification for the pessimistic utterance of the President of the Royal College of Surgeons, an utterance which has given new material to such newspapers as are trying to scare students from the Dublin schools.

Appointments to the Poor-Law Service.

It has been known for some time that the Department of Local Government and Public Health is dissatisfied with the present method of filling medical vacancies in the public dispensary service. In too many cases the choice is made by the local authorities on political or family grounds, even when more corrupt motives are not at work. The medical profession has long demanded that all medical appointments in the public service should be made as the result of competitive examination, and this proposal has been adopted by every Commission and committee of inquiry which has considered the question during the past 20 years. Either as a compromise with this or as a temporary measure it is believed that the Ministry of Local Government is anxious to take medical appointments out the hands of the local authorities, and to entrust them to an appointments board, which, consisting in the main of medical practitioners, would be competent to assess the claims of candidates from the professional point of view. An opportunity of testing this method of appointment by way of experiment has just occurred in Dublin. The Dublin guardians had been suspended from their duties several months ago by the Ministry and their functions are being performed by paid Commissioners. Three vacancies for medical officers had occurred in the union, and the Commissioners invited the several licensing bodies in Dublin to form an advisory committee by nominating one member each, the chairman of the committee to be the chairman of the General Council of County Councils. The Commissioners bound themselves to accept the recommendations of the advisory committee. The appointments were made recently, and a fairly full report of the proceedings of the Advisory Committee has been published. It is stated that the committee consisted of Sir Arthur Chance (representing the Royal Colleges of Surgeons and Physicians), Prof. A. F. Dixon (Dublin University), Prof. E. P. McLoughlin (National University), Dr. H. W. Mason (Apothecaries' Hall), and Senator P. W. Kenny, chairman. There were 64 candidates for the three vacancies, and by a process of continuous selection these were weeded down to five, who were then personally interviewed. Among the candidates finally selected was one lady. It is further stated that a resolution was proposed and seconded, but ruled out of order, to the effect that a man would be more acceptable to the great majority of Dublin dispensary patients than a woman of equal professional attainments. It is unfortunate that any of the members of the Advisory Committee should have tried to engage this committee in matters clearly outside its terms of reference. Moreover, as all licensing bodies in Ireland are open to men and women on the same terms, it is an anomaly that representatives of some of the licensing bodies should attempt to place medical women at a disadvantage with men in a public service.

The Apothecaries' Hall of Ireland.

A Bill presented by the Apothecaries' Hall of Ireland came recently before a Joint Committee of the Senate and the Dail. The object of the Bill was to empower the Hall to designate its licentiates as "Licentiates in Medicine and Surgery of the Apothecaries' Hall," instead of, as at present, "Licentiates of the Apothecaries' Hall." The Bill was unopposed. After the hearing of evidence the Joint Committee found unanimously that the preamble of the Bill was not proved to their satisfaction.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Prof. J. Bergonié.

Prof. Bergonié, director of the anti-cancer clinic at Bordeaux, whose work in radiology is well known, and who has been seriously ill for some time following the amputation of an arm, as the result of injuries sustained in the course of his radiological work, has recently been awarded, by the decree of the President of the Republic, the insignia of the Grand Cross of the Legion of Honour—the highest grade in that honour. The decoration was handed to Prof. Bergonié by Mr. Strauss, former Minister of Hygiene, in the presence of Profs. Proust and Roussy, of the Faculty of Medicine of Paris: and it bore the following inscription: "Although he was perfectly familiar with dangers of the prolonged exposure to X rays, he devoted his life to the study of their properties, and pursued his researches indefatigably with the unshaken will to benefit science by the discoveries of which he was the heroic victim, in the hope that humanity would enjoy the fruits of his sacrifice." Prof. Bergonié recently made a gift of 100,000 fr. to the Faculty of Medicine of Bordeaux to endow the anti-cancer campaign centre which has been founded there.

Two New Academicians.

Within a fortnight of each other two eminent surgeons, Prof. Félix Legueu and Prof. Jean Louis Faure, were elected members of the Academy of Medicine, and it came as a surprise to many in the medical profession that these two names had not long ago received the honour of inscription on that illustrious roll. Prof. Legueu, who succeeds the late Dr. Jalaguier, was born in Angers (Maine-et-Loire) in 1863. About 12 years ago he was elected to the chair of genito-urinary surgery at the University of Paris in succession to Guyon. His clinic in the Hôpital Necker has been attended by great numbers of students from France and from abroad, and the work of the clinic has been recorded in the *Archives Urologiques*, which Legueu founded. Prof. Faure was elected to the vacancy caused by the death of Dr. Richelot. He was born in the same year as Prof. Legueu, at Sainte Foy-la-Grande (Gironde). During the war he held the post of consulting surgeon to the Fourth Army. Since 1919 he has been professor at the gynæcological clinic at the Faculty of Medicine of Paris, where he has had a large following of students. In addition to his outstanding skill as a surgeon, Prof. Faure possesses great literary talent. He composed the "Hymne à la Paix," and a psychological study "L'Ame du Chirurgien," both of which achieved notable success. Prof. Faure has travelled widely and has done much to maintain the high standard of French surgery in the eyes of the world.

Doctors and Taxation.

Here, as with you, the press in interested at the moment in the income of medical men. In a Bill at present before Parliament there are two clauses which have given rise to comment. The first refers to compulsory keeping of accounts, and the second deals with the control of income-tax returns based on the taxpayer's standard of living. While, for purposes of taxation, commercial houses must furnish a balance-sheet of their income and expenditure, there is no legal obligation at present for any member of one of the learned professions to publish a balance-sheet showing his financial standing. The proposed Bill will make it obligatory in the future for professional men to keep an annual register containing a full statement of sums accruing to them from their professional duties, balanced against professional expenses. This book must be open to inspection at any time by the Tax Commissioners under penalty of a fine. As regards the income-tax, the Commissioner finds that at present it is often impossible to assess the tax on a higher rate of income than that returned by the taxpayer, although such return is

obviously not in accordance with the taxpayer's standard of living. The proposed Bill would fix a minimum rate of income, based on the external evidence of the taxpayer's fortunes, as evidenced by the rent of his premises and his general air of prosperity. If the annual return made by the taxpayer falls below this figure, the return will be considered insufficient. In such a case the taxpayer must prove to the Commissioner the exact state of his income, and, if he cannot do so, he will be taxed on the sum assessed on the evidence of material prosperity. The general assembly of the Union of the Medical Syndicates of France, an association which numbers some 16,000, has unanimously passed a resolution that a doctor should not be taxed on the basis of external evidence of wealth, for in many cases these external signs do not correspond to his real position. It is pointed out also that the learned professions, taken together, compose only a very small part of the taxpaying public (hardly 100,000 individuals) yet they pay 48 millions in taxes, as compared to agricultural labourers whose number runs into millions but who nevertheless do not pay more than 42 millions.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

High Hospital Fees and Lack of Clinical Material.

WITHIN the last few days a conflict on important issues has taken place between the Ministry of Health and Prof. Josef Meller, the well-known ophthalmic surgeon, head of the first Vienna eye clinic, arising from certain criticisms expressed by the professor on the methods employed by the administrative staff of the General Hospital in connexion with the payment of the hospital fees by patients. It appears that during one of his regular lectures Prof. Meller declared before his students that he would no longer tolerate the dismissal or non-admission of patients on the grounds that they were unable to pay the rather high fees which are now charged. From the teaching point of view he complained bitterly that clinical material was not available, in spite of his urgent request, because would-be patients as a whole were poor foreigners and could not pay treble the ordinary fees as charged them by the administrative officers; also that patients who had been admitted as third-class patients were forced to pay first-class fees and were thus driven away before they were cured. Naturally such methods would ruin the reputation of the Vienna General Hospital, of which the eye clinic is a part, and would impede useful teaching. Prof. Meller's repeated remonstrances to the authorities had hitherto been of no avail, and so he was forced to turn to the public for assistance in his fight against bureaucratism and "red tape." These accusations caused some consternation amongst the public the officials in the hospital and in the Ministry charged with the control of the hospital public feeling supported the professor. But the affairs. The press took the matter up, and, of course, answer given by the administrative staff and the Ministry was evasive, and did not satisfy Prof. Meller. So he declared that unless definite satisfaction was given him he would resign his post and leave Vienna altogether. The students and the teaching staff of the medical faculty took Prof. Meller's part, and exerted all possible influence to retain him by urging the Ministry to arrange matters in a mutually satisfactory manner. Up to the present, however, this has not borne fruit, and as Prof. Meller has received very flattering offers from a number of American and German universities there is great danger of his leaving Vienna. The attitude of the Ministry shows what kind of spirit prevails amongst our administrative officials in regard to science and teaching.

Cancer and Tuberculosis Mortality Statistics.

The new "Statistical Yearbook of the City of Vienna" contains a report on the last nine years in which the International Bertillon index of ætiology of death has been employed. This is the first report since the war, and is very complete and thorough. The following figures may be quoted. In 1923 there died 25,480 persons in this city—12,756 male, 12,724 female. Tuberculosis claimed 4630 victims, or 18 per cent. of the total deaths; cancer killed 2824, or 11 per cent. The absolute number of deaths has diminished within the last three years, because from 1915–20 the influence of the war was still felt, as well as the disastrous economic conditions. A very instructive series is the following:—

Year	Total mortality.	Tuberculosis mortality.	Year	Total mortality.	Tuberculosis mortality.
1915	37,018	7,810 (21·1%)	1920	34,179	7,464 (21·8%)
1916	37,631	9,651 (25·6%)	1921	28,297	5,265 (18·6%)
1917	46,131	11,741 (25·4%)	1922	30,068	5,552 (18·4%)
1918	51,497	11,531 (22·3%)	1923	25,480	4,630 (18·1%)
1919	40,932	10,606 (25·9%)			

It appears that the energetic and decided action of the municipal officers of health against tuberculosis is at last effective, as shown by the constant decrease of the mortality due to this disease. As regards cancer similar tables may be quoted.

Year.	Cancer deaths.	Percentage of total.	Year.	Cancer deaths.	Percentage of total.
1915	2846	7·6	1920	2423	7·0
1916	3091	8·2	1921	2618	9·2
1917	3040	6·5	1922	2769	9·2
1918	2672	5·1	1923	2824	11·0
1919	2604	6·4			

Here we find that contrary to tuberculosis cancer is steadily increasing as a cause of death.

Census and Health of Prostitutes.

An exact census of all the women registered at police headquarters as prostitutes is taken regularly every two or three years, and when this fell due a short time ago the medical staff provided for a "health census" also. The number of girls on the list was 1052, against 1287 in January and 1349 two years ago. But it must be kept in mind that at least an equal number may be classed as clandestine prostitutes. In the ten months of 1924, 116 girls had taken out new books; their age was 18–27; no female below 18 is taken on the list. In fact, the majority of the prostitutes are rather older than one should expect, as the age-group of 25–35 years amounted to over 40 per cent. of the total, and from 35–45 years 25 per cent. No more than 10 per cent. were below 20 years, and from 20–25 years the percentage was 16. The remaining 9 per cent. were between 45 and 61—this being the elderly limit on the list. At the time of the control census, 16 per cent. were manifestly affected with gonorrhœa, 3 per cent with manifest syphilis, whilst out of the total only 2 per cent. had not been proved at some time to have had venereal disease. "Latent" gonorrhœa or syphilis was known to be present in nearly all the subjects. It is interesting to note that the new applicants were also already infected, for no less than 90 per cent. of them required medical treatment. As regards tuberculosis, in quite 28 per cent. the apices were found affected, and in 12 per cent. advanced disease was present, so that the spread of the "morbus Viennensis" by these girls was no insignificant menace.

Can a Woman Doctor Practise as a Midwife?

A curious problem has arisen recently here as the direct outcome of the miserable economic situation of the medical profession. A woman doctor, who had tried without success to earn her living as a general practitioner, resolved to qualify as a midwife by taking the prescribed course at a training centre. Whether she will be allowed to practise under both qualifications is doubtful. It seems rather hard to credit the alleged statement that she was not able to obtain the necessary instruction in the art of the midwife during her career as medical student, and must perforce learn it along with the midwives.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following table gives health statistics of seven administrative counties and the Island of Guernsey for 1923 :—

Name of district.	Estimated (R.G.) mid-year population.	Birth-rate.	Death-rates per 1000 of the population.				Death-rates per 1000 births.		
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Neonatal mortality.	Infant mortality.	Maternal mort. from childbirth.
Derbyshire ..	600,000	21·1	10·7	0·75	1·6	1·8	36	75	5·0
Somerset.. ..	392,300	17·4	11·3	0·90	1·4	1·5	24	46	2·5
Gloucestershire	331,800	17·9	11·7	0·86	1·3	1·6	25	48	4·4
Norfolk	318,970	18·6	11·7	0·81	1·5	1·4	31	58	3·0
Lincolnshire (Parts of Lindsey) ..	256,600	20·3	11·5	0·96	1·3	1·9	30	62	3·1
East Sussex ..	255,998	15·1	11·2	0·91	1·6	1·4	23	45	2·8
Isle of Ely ..	75,250	20·1	12·3	0·77	1·8	1·9	34	66	6·0
Guernsey.. ..	38,200	20·8	14·2	1·60	1·3	1·2	31	73	1·3

Derbyshire.

Dr. Sidney Barwise reports that there have been 1634 cases of small-pox in Derbyshire since 1921 without a single death. There has been no change of virulence during the last four years, and Dr. Barwise assumes that the African or alastrim variety of small-pox breeds true to type. A scheme has now been approved for the provision of 50 beds at Bretby Hall for early bone and joint cases of tuberculosis in children and young adults. Hitherto such cases have been sent to Oswestry with most encouraging results, and the health committee are unanimous in their desire to provide treatment for such cases in their own area at once. Dr. Barwise considers that the results obtained by treating bone and joint cases are to-day the one bright spot in the treatment of tuberculosis. Every form of treatment recommended for pulmonary tuberculosis is carefully investigated in the Derbyshire sanatoriums, but Dr. Barwise feels that if good results are to be secured, the advanced cases must be, to some extent, jettisoned, as we cannot afford to fill the sanatoriums with patients who have no chance of ultimate recovery. Dr. A. Niven Robertson, the tuberculosis officer, gives particulars of the scheme of graduated labour and rest adopted in the sanatoriums, and mentions that the most recent methods suggested by Dr. Leonard Hill for getting the full benefit of fresh air have been adopted. Various records of kata-thermometer readings have been kept since January, 1924. The quartz-lamp treatment has given beneficial effects in glands of the neck, lupus, and the tuberculides. Good results are also obtained by artificial pneumothorax. Two new cases were treated in 1923 and the treatment of five old cases was continued from the previous year. On the other hand, Dr. Robertson records no benefit from the use of Dreyer's defatted vaccine, Raw's bovine vaccine, pneumosan, Spengler's I.K., O.T. inunctions on the lines suggested by Sir R. W. Philip, and Paget's nasal B.E. method. Dr. Robertson thinks that these remedies, like sodium morrhuate, collosol calcium, Yadil antiseptic, Koch's tuberculins, and the host of other tuberculins, will probably pass into a deserved oblivion.

Dr. Barwise deals at length with the question of goitre. He points out that the disease is usually prevalent in mountainous districts at a distance from the sea. He does not find that goitre is more prevalent in the districts of Derbyshire supplied with limestone water than in the districts supplied by moorland surface water, and water from the coal measures, and the Bunter sandstone. The relation between a deficiency of iodine and the occurrence of goitre is thoroughly discussed. The good preventive results obtained by the administration of iodine in Switzerland are mentioned, and figures quoted for the canton of St. Gallen showing that during the last three years the percentage of goitre among the school-children has decreased from 87·6 to 13·1, following the use of chocolate tablets containing an organic form of iodine. Dr. Barwise mentions the three ways in which the problem may be tackled. First, by the iodisation of the water-supply as in Rochester, U.S.A.; secondly, by the use of iodised salt; and thirdly, by the use of iodised sweets or chocolates. He emphasises the fact that the problem is much more than the prevention of simple goitre and implies, in addition, the control of various forms of physical and mental degeneration, such as cretinism, mutism, and idiocy, dependent upon thyroid insufficiency.

Dr. Barwise also thinks that the freer use of iodine in Derbyshire would lead to a greater freedom from infectious complaints and an improvement in the general health. He sums up the situation by saying that the time has now arrived when "Derbyshire neck" can, by simple procedure, be made a thing of the past.

During the first six months of 1924 there was a great increase in the number of cases of encephalitis lethargica. Thus, up to the end of June 64 cases had been notified as compared with an average of about ten for the three preceding years. The present condition, says Dr. Barwise, is serious, both on account of the 48 per cent. case-mortality and the after-effects on the moral character and physical condition of survivors. Dr. Barwise points out that the technique in the treatment of syphilis has been much simplified by the substitution of intramuscular for intravenous injections. In consequence he is more hopeful as to the future, as syphilis can now be more readily treated by the general practitioner.

Dr. Barwise feels sure that the Milk and Dairies Amendment Act, 1922, has acted as a stimulus to the production of cleaner milk, although no work has been done in the county directly under the Act. During the present year the agricultural committee have offered prizes for a clean milk competition and details of the tests devised for the competition are given. During 1923, 282 mixed milks were examined for the presence of tubercle bacilli, and 22, or 7·8 per cent., were found to be infected. The report concludes with health notes drawn up at the suggestion of the Derbyshire Insurance Committee.

Somerset.

Dr. William G. Savage reports that in April, 1923, the Ministry of Health constituted the county council the authority for providing isolation for small-pox in the administrative county, excluding the boroughs of Chard and Yeovil and the rural district of Chard, which already possessed accommodation for small-pox. The county council have obtained one site for a small-pox hospital for the northern part of the county at Chew Magna and a second site at Cossington for the southern. On the latter site an eight-bed small-pox hospital and a motor ambulance have been provided, on the northern site as yet only a water-supply. It is intended to use the small-pox hospital for isolated cases or for the first few cases of an epidemic and to provide additional accommodation on the two sites as needed. Only two cases of small-pox were notified during the year; one was not diagnosed until he had left the county and the other was treated at home. There has been a noteworthy decline in the deaths from measles, especially in the last two quinquennia. Dr. Savage attributes this, in part, to educative public health work. There are two lines of attack—namely, the effort to secure

postponement of the disease, and secondly, the instructions of the parents of patients as to the dangers of neglect. The county health visitors have worked on these lines since 1917.

Dr. Savage draws a contrast between the decline in the death-rate from pulmonary tuberculosis during the present century and the failure to decline of the death-rate from non-pulmonary tuberculosis during the same period, and says the contrast is hardly to be wondered at seeing that a considerable proportion of non-pulmonary tuberculosis is due to milk and that nothing is being done to deal with this source of infection. During 1923 the deaths from pulmonary tuberculosis were 23 less than in 1922, whereas the deaths from non-pulmonary tuberculosis were 11 more. The county council are, however, beginning to take active steps with regard to the milk-supply, and are now empowered by the 1922 Act to take over, with the approval of the Ministry of Health, the duties of a defaulting local authority. Dr. Savage has drawn up a milk report score-card, mainly with the idea of educating the milk-producers and purveyors throughout the county. Work under the various Milk Orders has never been properly done in the past, he says, and has been largely a farce. The authorities vary very much now in the zeal and thoroughness with which they undertake the work. During the present year a number of demonstrations on the production of clean milk have been given, with the help of the agricultural committee and the Agricultural Institute at Cannington, and have undoubtedly done good. It is also proposed to hold an extensive clean milk competition. Dr. Savage would like to see the principle adopted that the agricultural department of the county council should concern itself with raising the standard for clean milk production and that the public health inspection side should especially deal with the minority of very neglectful milk-producers. He does not think that the production and sale of graded milks will make much headway until further education of the consumers has been effected. The county council has suggested to the local authorities that no purveyor of milk should be registered unless he has efficient means for cleansing his vessels by steam or boiling water, a suitable place for storing his milk vessels, and a suitable place for storing his milk.

Dr. Savage reports that there are still a good many rural parishes and some larger urban areas with an insufficient or unsatisfactory water-supply. Further steps were taken during the year to compel the owners of milk depôts to cease the pollution of streams with milk washings. It is a much more difficult matter, Dr. Savage points out, to secure a satisfactory remedy for pollution by whey. An analysis of the Census figures of 1911 and 1921 indicate a definite deterioration of housing accommodation. In addition to the scarcity of houses, there is great difficulty in getting repairs carried out, partly owing to the shortage of skilled workers and partly owing to the low rentals obtainable. Dr. Savage urges the importance of town-planning, especially for seaside resorts, and points out that every urban area with a population over 20,000 must prepare a scheme by the end of 1927. The medical officer of health of Minehead (population 5181) has drawn attention to the need for a comprehensive scheme for his district.

Gloucestershire.

Dr. J. Middleton Martin states that the outbreak of small-pox which began at the end of 1922, persisted in one part of the county until May, 1924. The total number of cases reported was 419, and there was one death. During 1923 the public health committee decided to undertake, with the assistance of the National Milk Publicity Council, a milk campaign. The campaign has been carried out during the present year, and was inaugurated, by a meeting of all interested, in the Shire Hall in April, 1924. This has been followed by addresses in the schools and to various organisations, such as girl guides, boy scouts, and women's institutes, by demonstrations on the production of clean milk at various farms, and by public meetings in the larger centres. A clean milk competition is to be held during the winter. The Gloucestershire scheme for the extension of medical services is making smooth progress. It is gradually enlarging its scope so as to cover the whole administrative county, and orthopædic treatment has now been added to the services available.

Norfolk.

Dr. J. T. C. Nash would like to see all forms of tuberculosis treated under one administration at Stanninghall by the addition of an admission block. If this were done a resident medical superintendent and a larger nursing staff would be necessary, but against this there would be a saving of the expenditure at present incurred in sending patients away to other institutions. He thinks surgical tuberculosis could be treated at Stanninghall by calling in the aid of the surgical staff of the Norwich Hospital, or that it might be preferable to have an ad hoc institution for the treatment of all forms of crippling. Dr. Nash points out that most of the houses built during the last few years are out of reach of the slender resources of the agricultural labourer. A considerable number of old railway carriages are being converted into dwellings and there is much to be said, he thinks, for this cheap substitute for ordinary houses, when the cost of building is prohibitive and the shortage of houses acute; but sanitary authorities will need to ensure that a wholesome water-supply is available and that no nuisance is created.

Lincoln: Parts of Lindsey.

Dr. R. Ashleigh Glegg reports that the little children have suffered from the cutting down of the milk grants. This is to be met by raising the income limit to the level of 9s. per head for families with one child only and by the allowance of milk at below cost price in necessitous cases for infants up to 3 years of age. There is a need for the increase of the dental staff and a recommendation for the appointment of a third dentist by the education and health committees jointly is under consideration. The county council acts as isolation hospital authority for the north of the county, but the proposal to erect a hospital at Brumby was rejected by a small majority, and Dr. Glegg strongly urges the council to reconsider its decision. Branston Hall, a large mansion, situated about four miles from Lincoln, with 100 acres of park and gardens, was purchased by the council two years ago for use as a sanatorium. It was intended to provide accommodation there for the three administrative counties of Lincolnshire and the borough of Grimsby, by using the hall for women and children and by erecting a pavilion for 50 men. The Ministry of Health agreed to the proposal in May, 1921, but two months later asked the council to postpone the erection of the pavilion on the grounds of economy. The hall was opened for the reception of women and children on Jan. 4th, 1923. There are five shelters available for women and accommodation is provided for 35 women and 35 children. Dr. Glegg points out that there is also great need for a hospital for advanced cases and for the provision of treatment for bones, joints, and glands. In view of the half-hearted way in which many of the district councils are dealing with housing difficulties, Dr. Glegg thinks the county council should erect some good houses to be let to families attacked by tuberculosis at rentals similar to what they are at present paying for the insanitary and overcrowded dwellings which many of them inhabit.

East Sussex.

Dr. Alex. G. R. Foulerton says that an adequate remedy for the continuing shortage of houses is not likely to be found by the local sanitary authorities. Most of the additional accommodation provided so far has been the result of private enterprise, and it is to subsidised private enterprise that he looks for improvement in the future. Up to the

present maternity beds have been provided at the Brighton Women's Hospital and the Crowborough Cottage Hospital. It is hoped that during the current year additional beds will be secured for the use of the county at the recently opened maternity home at Hastings. The cases for which the committee endeavours to provide hospital treatment are: emergencies during confinement, cases where difficulty is apprehended during pregnancy, cases where home conditions are unsatisfactory, and cases where the woman is living in a remote part of the county.

Isle of Ely.

Dr. J. Pixton Walker tells us that at the recent Census the Isle of Ely had a higher proportion of agricultural workers than any other portion of England and Wales—namely 181 per 1000 occupied males. There are clinics for tuberculosis at Ely, March, and Wisbech, but there is no hospital or sanatorium in the administrative county. The council reserves four male and one female bed at Ipswich sanatorium. It has not been considered advisable to increase this number of beds, because it is found advantageous for climatic or other reasons to send tuberculosis cases to hospitals or sanatoriums in various parts of the country. Venereal diseases are treated at Addenbrooke's Hospital, Cambridge, and rail fares are paid by the council for necessitous cases. Several districts in the county have not made any hospital provisions for small-pox. Ten cases of typhoid fever occurred in the borough of Wisbech, but no cause could be assigned for them.

Guernsey.

Dr. H. Draper Bishop states that the chief industry of the island is the growing of tomatoes, grapes, and other fruit, vegetables, and flowers, chiefly under glass, for export. Another important industry is the export of granite for road-making. During 1923 19,241 tons of tomatoes, 1619 tons of flowers, 1675 tons of grapes, 2230 tons of vegetables, and 185,740 tons of granite were exported. A third industry is the rearing of Guernsey cattle for sale in England and the U.S.A., and these cattle are highly prized not only for their rich milk, but "above all for their freedom from tuberculosis." The water-supply of Guernsey, derived from deep wells, is the property of the Government of the island. The average yearly hours of sunshine from 1903 to 1922 were 1902·8 hours, and during 1923 the record was 1893·4 hours.

Dr. Bishop comments on the unusually high death-rate from tuberculosis during the year, but the average for the years 1906–22 is also higher than one would expect in an island so favourably situated as Guernsey. Dr. Bishop, however, points out that all is not well with regard to housing matters. Accommodation was provided for 18 families during the year and "the States have realised their great responsibilities in the matter and shown an earnest determination to improve the home conditions of those unfortunate people who are now living under conditions most prejudicial to their well-being." Diphtheria, which has been prevalent recently, was less prevalent than in the two preceding years. As the result of a fatal case which was overlooked until a few hours before death, eight cases were notified from one family which was living in most insanitary and overcrowded conditions.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED NOV. 29TH, 1924.

Notifications.—The following cases of infectious disease were notified during the week:—Small-pox, 122; scarlet fever, 2294; diphtheria, 1092; enteric fever, 59; pneumonia, 1193; puerperal fever, 47; cerebro-spinal fever, 8; acute poliomyelitis, 20; acute polio-encephalitis, 2; encephalitis lethargica, 52; continued fever, 1; dysentery, 21; ophthalmia neonatorum, 113. There were no cases of cholera, plague, or typhus fever notified during the week. Of the cases of small-pox, 12 were notified from the county of Chester (Dukinfield 8, Stalybridge 4), 54 from Derbyshire (Derby 37, Bolsover 4, Chesterfield 4, Chesterfield R.D. 9), 16 from Yorks. N. Riding (Middlesbrough 15, Eston 1). Six of the cases of dysentery were notified from ports (Barry 5, Plymouth 1), the remainder from Woking 8, Bristol 4, Alfreton (Derby), Southall-Northwood, and Wallsend 1 each.

Deaths.—In the aggregate of great towns, including London, there were 2 deaths from enteric fever, none from small-pox, 8 from scarlet fever, 20 from diphtheria, 57 from measles, 67 from influenza. In London itself the deaths from diphtheria numbered 8, from infantile diarrhœa 23.

THE GENERAL MEDICAL COUNCIL.

AT the concluding sitting of the winter session of the Council on Friday, Nov. 28th, it was announced that the Registrar had been directed to restore to the Medical Register the names of Charles Harold Bennett and David Arnold Chaning Pearce. At the same sitting the reports of a number of Committees were received and approved.

Public Health Committee.

This Committee reported that most of the licensing bodies which grant a diploma in public health had complied with a request to submit copies of their new regulations. The Committee were satisfied with the majority of the answers received; in other cases they had arranged to address inquiries to certain licensing bodies. When answers had been received to these inquiries, the Committee would submit a report to the Council.

Pharmacopœia Committee.

This Committee reported that the number of copies of the British Pharmacopœia, 1914, sold in the year ending Nov. 24th, 1924, was 2279, practically the same number as in the preceding year. The total number sold since the date of publication was 48,067. The stock remaining on hand was reduced to less than 900 copies. The Committee was authorised to issue a further impression of 5000 copies, taking the opportunity to make any necessary typographical corrections. Under certain reserves, the British Government had decided to send delegates to the proposed International Conference on Unification of Formulæ, to be held at Brussels in 1925, and Sir Nestor Tirard had been nominated to attend on behalf of the Council.

Education Committee.

This Committee had considered the inclusion of parasitology in the medical curriculum, and the matter would be brought up for further consideration when the next reprint of the resolutions of the Committee was made. Request had been received from the University of New Zealand that the Council would consider favourably the substitution of an accrediting system in lieu of the matriculation examination as the qualification for entrance to the University. The Committee resolved that in each case it would have to be shown that the New Zealand certificate had been accepted by one of the Universities in this country. Satisfactory evidence as to visitation having been received, Christ's Hospital was added to the list of institutions recognised by a licensing body, and approved by the Council. The Registrar reported that, since May last, the registration of 97 medical students had been antedated in accordance with precedent. Of these, 49 were registered in England, 43 in Scotland, and 5 in Ireland. The registration of 11 dental students had also been antedated.

Examination Committee.

Since May members of this Committee had visited the intermediate (anatomy and physiology) examinations of several additional bodies. The Universities of Oxford, Leeds, Liverpool, Bristol, and Wales, and the Apothecaries' Hall of Dublin had not yet been visited, but the Deans of their Faculties of Medicine and a member of the Council, Dr. Magennis, had supplied information showing the amount of time

allotted by each of the licensing bodies to the written, oral, and practical examinations on the subjects concerned. This return shows that the amount of time allotted to the written examination in anatomy varied between two hours and six hours, when two papers were set, and to the oral and practical examinations from ten minutes to three hours. The length of the written examinations in physiology varied from one and a half hours to six hours, while the oral and practical sections of histology, biochemistry, and experimental physiology were together allotted in one case as little as ten minutes and in another 11 hours. Attention was drawn to the fact that No. 6 of the Council's recommendations—viz., "Except in subordinate parts of the examination there should always be two examiners participating when a candidate is undergoing any kind of oral examination," was not strictly observed by all the bodies. At a previous meeting of the Council the Registrar had been directed to ask the bodies whether they did or did not take into consideration class work and class records. Most of the bodies had now replied. The English Conjoint Board, the Apothecaries' Society, the University of Cambridge, the University of London, the University of Birmingham, and the Scottish Conjoint Board answered in the negative. Affirmative replies came from the Universities of Durham, Liverpool, Leeds, Sheffield, Glasgow, Aberdeen, St. Andrews, and Dublin. The University of Oxford had the matter under consideration; in Manchester class work was considered in certain subjects but not all; in Edinburgh only when there was doubt as to whether candidates should pass or fail. The National University of Ireland reported that it had been adopted in Dublin, but in Cork only in the border-line cases.

Dental Education and Examination Committee.

A report on the examination of the Royal College of Surgeons of England had been circulated for the information of the Council. The only remaining reports to come in were those of the Royal College of Surgeons in Ireland, the Universities of Durham, Birmingham, St. Andrews, Sheffield, Belfast, and the National University of Ireland. With the exception of Birmingham these have all been inspected, but the bodies concerned had not yet supplied their observations. The inspector was being asked to make a general report on the result of his inspection for presentation to the May session. In view of the amended recommendations for the dental curriculum the Committee was communicating with all the colonial and foreign recognised qualifying bodies to ascertain if their requirements had been brought into line with those of the Council.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg.-Comdr. J. D. S. Milln is placed on retd. list with rank of Surg.-Capt.

ROYAL ARMY MEDICAL CORPS.

Col. R. J. W. Mawhinny, late R.A.M.C., having attained the age for compulsory retirement, is placed on ret. pay.

Lt.-Col. and Bt. Col. G. J. A.Ormsby, from R.A.M.C., to be Col., vice Col. R. J. W. Mawhinny, to ret. pay.

ARMY RESERVE OF OFFICERS.

Lt. F. W. Oldershaw, late Serv. Bns., Lincoln. R., to be Lt.

TERRITORIAL ARMY.

The King has approved of the following appointments:—To be Hon. Surgeon to His Majesty: Col. F. Kelly, in succession to Col. J. Clay (retd.). To be Hon. Physician to His Majesty: Col. A. B. Soltau, in succession to Col. C. P. Oliver (retd.).

ROYAL AIR FORCE.

The undermentioned are granted short service commissions as Flying Officers: W. A. Beck and J. Parry-Evans.

Correspondence.

"Audi alteram partem."

THE ALLEGED STERILITY OF PRESENT-DAY BACTERIOLOGY.

To the Editor of THE LANCET.

SIR,—Since the recent developments in the teaching of bacteriology in this University have been referred to in the correspondence under the above heading, and in the address by Prof. A. E. Boycott which was its origin, I should like to remove any possible misunderstanding of our present arrangements, or of the ideas on which they are based.

Medicine is the mother of the sciences, and her fecundity can hardly have been surpassed by the old woman who lived in a shoe, whose embarrassments she shares. Bacteriology is one of the youngest of the brood, but no one can question its parentage. I am sure that Prof. Boycott does not wish to see the baby abandoned on the doorstep of the botanical department. He is simply calling attention to the fact, so often overlooked by parents, that the child is growing up. If I read his address aright, I take it that he is suggesting that bacteriology is based on too narrow a foundation, and that it is unlikely to develop healthfully until that foundation is broadened. He suggests that there is need for a study of bacteria as living things, regarded as a whole, and not particularly from the point of view of their interference with man and his domestic animals, or with his commercial pursuits; for any suggestion that bacteria are to be studied in the curious vacuum depicted by Prof. J. C. G. Ledingham, I have searched in vain. Prof. Boycott seems to think that one of the most convenient homes for bacteriological study of this type would be in, or in close association with, a department of botany. In both conclusions I find myself in close agreement with him, but I do not think, nor I believe does he, that the matter ends there.

That very much would be gained by a purely botanical study of bacteria I have no doubt at all, and if botanists would extend their activities into this field I believe that all present-day bacteriologists would wish them well, and wait with some eagerness for the results. But most of us, who have entered the bacteriological field by the medical road, have no wish to forget our past journey; indeed, many of us would be ill-equipped for those very studies in which the botanist would excel. Prof. Boycott's address was given at the opening of a new institute of pathology, and it was, I think, clearly in his mind that the study of infectious processes was likely to be a serious loser by our inadequate knowledge of many of the fundamental facts about bacteria, on which such study must be based. That there is, in fact, an urgent need, especially perhaps in this country, for a broadening of the basis of bacteriological training will hardly be denied. For emphasising this need, I feel that all of us who are interested in the welfare of our science owe Prof. Boycott a debt of gratitude.

I do not think that the following propositions will be denied by any of your correspondents: (1) That the training in bacteriology given in the course of the medical curriculum is, and must remain, too incomplete and too specialised to form any sound basis for a bacteriological career. (2) That while the student, in his later years or after qualification, can readily obtain further training in bacteriological methods, in the laboratories attached to our teaching hospitals, such training is, quite rightly, mainly confined to bacteriology in its immediate relation to human disease. (3) That, if anyone wishes to take up any branch of bacteriology as a serious study, he should be given facilities for obtaining an adequate training in the general principles of the subject.

There are two obvious ways in which this object can be gained. Bacteriology can be given a place among the subjects to be studied by a candidate for

the B.Sc. degree. This method has obvious advantages, and has been adopted at several universities. A special diploma can be granted, after an adequate course of study and an adequate examination test. This method has the disadvantage that the training cannot be so thorough as in the case of a course for an honours degree. It has the advantage that it is open to post-graduates, and is therefore available to those who are attracted to bacteriological work late in their university career. It is this latter method which we have adopted here in Manchester. The course for the diploma extends over a full academic year, and its essential basis is a thorough study of representatives of all the more important bacterial groups. The successful organisation of this part of our course has been rendered possible by the existence of the national collection of type cultures, in connexion with which we all owe so great a debt to Prof. Ledingham. In addition to this general foundation, each student must take up two or more special branches of bacteriology, adapted to the requirements of medical or non-medical study. We believe that, in this way, it will be possible to turn out students with a sound, if elementary, knowledge of the general principles of bacteriology, of the general characteristics of the more important bacterial groups, and of bacteriological technique.

That the provision of such a basis for their future work will be no small advantage, this correspondence has, I think, already demonstrated.

I am, Sir, yours faithfully,

W. W. C. TOPLEY.

Department of Bacteriology and Preventive Medicine, University of Manchester, Dec. 5th, 1924.

THE STATUS OF PATHOLOGY.

To the Editor of THE LANCET.

SIR,—I was glad to see that Prof. A. E. Boycott in his address at Montreal advocated the recognition of pathology as a branch of natural science as I have been advocating this for 25 years. It is not to the credit of our universities that they refuse this recognition, while many of them are only too ready to exploit the commercial possibilities of pathology as a source of income. Would Dr. Boycott use his influence with the Royal Society in this matter and also in getting the Pathological Society of Great Britain and Ireland included in the official list of scientific societies? At present, I believe, it is not included. Prof. R. T. Hewlett states that bacteriology is recognised by the London University as a science. If bacteriology is so recognised why not pathology? Some universities recognise that heterogeneous mixture known as public health as a subject for science degrees!

I am, Sir, yours faithfully,

CHARLES POWELL WHITE.

Manchester, Dec. 8th, 1924.

THE EFFECT OF SPLENECTOMY ON THE PRODUCTION OF EXPERIMENTAL PURPURA.

To the Editor of THE LANCET.

SIR,—Dr. Sutherland takes me to task for having gone beyond my experimental evidence in concluding that "Splenectomy cannot be relied on to give any but temporary relief in the treatment of purpura hæmorrhagica." On the whole, I am forced to admit the justice of his criticism, but that my conclusion is as groundless as his letter would make it appear I am not prepared to concede. We are still ignorant of the pathogenesis of purpura hæmorrhagica, but there is reason to suppose that it is produced by the action of some toxin on the platelets and thrombopoietic tissue. The occurrence of purpura, associated with a thrombopenia, in acute infections and the experimental production of purpura in animals by means of bacterial toxins, such as diphtheria toxin, support this contention. Presumably this toxin is the product of some focus of infection, which may be situated in the spleen, but there is no reason to suppose that it is invariably so located. Should the sole toxic focus be in the spleen, then I should expect splenectomy to effect a permanent cure. On the other hand, should the focus be located elsewhere or should there be multiple foci, in the spleen as well as in other tissues, then the effect of splenectomy would be merely of a temporary nature such as I was able to demonstrate experimentally.

Briefly, splenectomy is effective in the treatment of purpura hæmorrhagica not because of the removal of the spleen qua spleen, but because it removes the toxic focus. That this is not pure hypothesis is borne out by clinical experience. Kaznelson himself admits that there are cases of this condition in which splenectomy cannot be expected to effect a cure, and one, at least, of the American cases relapsed after a temporary amelioration. Of course, it might be argued that our insufficient knowledge leads us to group together under the term purpura hæmorrhagica cases which are essentially different in their pathogenesis, and that only those cases which are permanently benefited by splenectomy are really entitled to this term. This is more or less the attitude adopted by Kaznelson and he has produced evidence in support of this contention.

This question, however, still requires elucidating, and it will be mainly from a detailed study of clinical material, including an examination of the spleens removed by the surgeon in so-called cases of purpura hæmorrhagica, both from the histological and experimental point of view, that a correct understanding of these conditions will be arrived at.

I am, Sir, yours faithfully,

London, Dec. 8th, 1924. S. PHILLIPS BEDSON.

THE CLINICAL SIGNIFICANCE OF CONSTIPATION.

To the Editor of THE LANCET.

SIR,—The letter by Dr. E. G. March in THE LANCET of Dec. 6th proves conclusively that stasis and toxæmia cannot be gauged by the number or consistency of the stools. Bismuth X ray examinations show that a patient may have one, two, or more evacuations daily, and may nevertheless harbour stagnant fæces for weeks. Decomposing masses accumulate in the cæcum and ascending colon where they act as irritants and set up catarrh of the mucous membrane—colitis. Fæcal material is carried through the irritated bowel in small quantities mixed with mucus till enough has accumulated in the pelvic colon and rectum to cause an evacuation. There may be several evacuations, but nevertheless the cæcum remains packed, the ileum is unable to propel its contents into the tensely filled cæcum, and the lower ileal coils become a cesspool teeming with micro-organisms which set up intense toxæmia. This state of affairs exists in thousands of our fellow creatures who, consequently, are living on the verge of a breakdown. Not to mention the serious general manifestations of neglected stasis, the local breakdowns in the alimentary tract include such familiar conditions as appendicitis, gallstones, gastric and duodenal ulcer, and, worst of all, cancer. To the unobservant these troubles seem to come as "bolts out of the blue," for many of us accept as normal a state of things which the X rays and the laboratory prove to be highly and dangerously pathological. While admitting, however, that a person whose bowels act only once a day may be less diseased than one who has several daily evacuations, I do not regard "once a day" as the ideal; thrice daily (after meals) should be attained by persons living an active, hygienic life, eating natural "live" food, and adopting the natural squatting posture for defæcation. (THE LANCET, 1923, i., 132.)

I am, Sir, yours faithfully,

ALFRED C. JORDAN.

Upper Wimpole-street, W., Dec. 6th, 1924.

A CASE OF INSULIN POISONING.

To the Editor of THE LANCET.

SIR,—The following case may be of interest to your readers.

Mr. X, aged ?, had been taking 20 units of insulin three times daily for months. He had several times experienced warning symptoms after the midday dose, a feeling of apprehension, weakness, sweating, tremor, and an "all-gone" sensation in the stomach. He had not reported these warnings to his doctor, nor had he ever taken sugar for them. On Nov. 29th he remembers taking this dose as usual at 12 noon, but nothing subsequent to this. At 12.30 he was found by his relatives in a state of coma and sent into this hospital. I saw him at 3.45 P.M. and he was then still comatose; every muscle in the body rigid; feet and legs extended and immovable, like bars of iron; extensor plantar responses in both feet; patellar clonus; pupils neither dilated nor contracted, and responsive to light; breathing very deep and irregular, and a full bounding pulse. The facial expression was most remarkable, being now one of intense effort, now of extreme fear. His arms and trunk were in constant motion, the actions being those of tremendous effort, the movements slow and every muscle standing out.

He was catheterised to exclude the possibility of diabetic coma (I had only a vague history), and then given adrenalin ℥v., and in ten minutes another ℥vii. Improvement commenced immediately after the second dose, the first sign being relaxation of the overacting muscles; the breathing then became quieter, and the expression changed to that of one waking from a strange sleep. Within ten minutes the mind became clear, and he asked where he was. From this point he made an uninterrupted recovery.

The interest of this case seems to lie in (1) the physiological expression of hypoglycæmia simulating the response of the body to some great emergency—e.g., the muscular action, the deep respiration, the full pulse, and the emotional expression. (2) The length of time which a state of hypoglycæmic coma can last, untreated, and recover rapidly and completely—four hours in this case. (3) The action of adrenalin is confirmed. (4) The occurrence of both this and the warning attacks after the midday dose, just when the action of the morning dose is at its maximum (four to six hours). This would tend to show that a twice daily injection is better and safer for patients giving themselves their own injections. (5) The close resemblance of the spasm in this patient to that observed in frogs with experimental insulin poisoning by Huxley and Fulton (*Nature*, Feb. 16th, 1924).—I am, Sir, yours faithfully,

ROBERT V. B. EMMONS, M.B. Oxf.,
Dec. 5th, 1924. House Physician, Radcliffe Infirmary, Oxford.

MEASLES TWICE.

To the Editor of THE LANCET.

SIR,—As in your issue of Nov. 29th you stated that Prof. Johann Loos says that there are no second attacks of measles, I thought that a series of 16 cases of measles which I attended during 1911 might be of interest as each case was, after an interval averaging 16 or 17 days, followed by a second attack. The following case is typical of the series:—

Winifred C., aged 3, was taken ill on April 21st; she had all the catarrhal signs of the invasion stage of measles, and the eruption first became visible on the face on April 24th; this spread over the body and had the appearance of the rash seen in measles. The temperature reached 104° F., and some broncho-pneumonia developed. The condition of the lungs was improving and the temperature was nearly normal when, on May 6th, it rose to 102°; the eyes and nose were running, and on May 9th the rash came out; this was similar to the first rash, it faded in a few days, and the child soon recovered.

All the cases occurred in young children, only three being above 6 years old. None had had a previous attack of measles. Several of the children were examined for Koplk's spots, but there was no definite evidence of these found. None of the second attacks were fatal, but there were several fatal cases of measles in the same district. Of the 16 cases, eight lived in two adjoining streets, and five more lived in a neighbouring district. In one house two children were taken ill about the same time, but only one had a second attack. In another house there were two children; the elder one was taken ill, and ten days after the younger; as this one was recovering, the elder had a second attack, and ten days later the younger one also had a second attack.

During the time these cases were occurring I attended 106 cases of measles. These were in four separate districts. In the first district, 8 out of 54 had a second attack; in the second, 5 out of 30; in the third, 1 out of 4; in the fourth, 2 out of 18. The interval between the attacks varied from 12 to 20 days. This did not appear to be influenced by the complications, as in two cases the second attack developed while broncho-pneumonia was present. Both the primary and secondary attacks were of ordinary severity, except the primary attack in two cases. I am, Sir, yours faithfully,

Bristol, Dec. 6th, 1924. ERNEST K. GAWN, M.D.

*** In his article Prof. Loos was not considering relapse or what he calls "reiteration" in measles, and it is under this heading rather than second attack that Dr. Gawn's interesting cases fall. Such relapse seems to be very rare.—ED. L.

LUPUS ERYTHEMATOSUS AND ALOPECIA AREATA.

To the Editor of THE LANCET.

SIR,—The following case supports the late Dr. M. G. Hannay's interesting observations in THE LANCET of Nov. 29th (p. 1119) on the association of these conditions.

Twenty-five years ago an undergraduate of the athletic type developed alopecia areata. About a year later, in a boxing competition, he received a very slight and superficial abrasion of the skin over the left nasal bone, and also a small bruise over the fourth and fifth metacarpal bones. These were considered trifles and ignored. Suppuration did not occur in the devitalised tissues, but the lesions remained slightly red, painless, and failed to heal. Some months later the unsatisfactory state of the lesions was attributed to neglect and the fact that boxing pursuits had continued. Later still a medical student made the shrewd remark that the condition suggested lupus erythematosus. It was difficult at that time to get this opinion confirmed, but it ultimately proved to be correct. The alopecia areata was active for perhaps a period of three years, and then apparently spontaneously ceased for many years. There has been slight itching of the scalp recently. The face lesions have slowly progressed.

I am, Sir, yours faithfully,
J. HARGREAVES ROBINSON.
Harley-street, W., Dec. 8th, 1924.

SUCTION IN SURGERY.

To the Editor of THE LANCET.

SIR,—Twenty years ago, while working on the problem discussed by Mr. Norman C. Lake in your to-day's issue, I devised the two following instruments.

A sucker for abdominal fluids, consisting of a metal globe, one inch in diameter, with multiple perforations everywhere except at its extreme base. Into the top of the globe ran two parallel metal tubes. One, 9 in. in length, reached only to the top of the globe, its other end being open to the air. The other tube, length 15 in. extended, inside the globe, to just short of the globe's bottom; the outer end of this tube was curved and connected with the suction apparatus. With the globe immersed, either partially or completely, in a pool of fluid, the fluid gravitates, through the perforations, into the bottom of the globe and surrounds the end of the longer tube through which the fluid is sucked out. The shorter tube, by connecting the interior of the globe with the air, prevents the suction from extending to tissues outside the globe.

A combined Junker and evacuator, for cleft palate and allied operations. This consisted of

two parallel metal tubes, with curved ends, one for each nostril, the distance between the tubes being adjustable to suit the size of the nose. The anæsthetic tube carried on its inner end a short length of rubber tubing with a terminal opening, which, when in the nose, lay at the level of the posterior nares, the outer end being attached to the tubing of a Junker bottle. The evacuation tube had on its inner end a piece of rubber tubing whose end, having a lateral opening in addition to the terminal opening, lay in the pool of blood and saliva which collects in the nasopharynx of a cleft-palate case when the patient's head is drawn over the end of the table.

These two suckers are described in the *Medical Annual* for 1902.

During operation suckers are useful for removing fluids from cavities and from hollow organs. Their employment for removal of blood from superficial wounds, in my opinion, has little to recommend it. Suction was provided by an ordinary Higginson enema syringe worked by a nurse. The sucking end of the syringe was fitted into six inches of stout rubber tubing, this large tubing being linked up by a tapered metal tube with the six feet of small tubing leading from the sucker. When required a collecting bottle was interposed between the syringe and the end of the tubing attached to the sucker. The reversed enema syringe is very efficient, is available at any time and anywhere, and does away with the need for suction apparatus worked either by water, electricity, or gas bottles.

In my own theatre for 12 years I have used a suction apparatus worked by water, on the principle of that used by dentists. Recently, in a theatre which had no water-suction apparatus, I was glad to revert to the enema syringe, which, during an operation on a ruptured ovarian cyst, evacuated from the pelvis half a gallon of fluid.

I am, Sir, yours faithfully,

Plymouth, Dec. 6th, 1924. C. HAMILTON WHITEFORD.

A WELCOME DISCLAIMER.

To the Editor of THE LANCET.

SIR,—I am very much alive and am going away for a trip to Florida, Cuba, and California, and will put in my time fishing, golfing, &c. I will appreciate it greatly if you will see that THE LANCET corrects the error, as I do not wish to have my many friends in London think I am no more when I am enjoying the most active time of my life.

With very best wishes, I remain,
Sincerely yours,

New York, Nov. 24th, 1924. S. G. GANT.

*** Our review of Prof. Gant's great treatise on Proctology (THE LANCET, Nov. 8th) suggested that its author was dead. Our error is corrected above on good authority and in conclusive terms, we are glad to say.—ED. L.

CHELSEA HOSPITAL FOR WOMEN.—This hospital and its convalescent home at St. Leonards-on-Sea are able to look back upon an excellent year's work. Great progress has been made at the hospital during the past year in the building of its nurses' home and in the completion of the fund for its erection. When the festival dinner was held in May last under the presidency of the then Lord Mayor, the amount of the appeal was £20,000 for the purpose and for the opening of the 47 additional beds. Of this sum there still remains to collect £6500. This is urgently needed so that the home may be opened in the new year free of debt, and also that additional regular income may be forthcoming in view of the great increase which will shortly be possible in the work of the hospital. Some of the additional beds will be devoted to the treatment of those who can no longer, as formerly, afford to pay the fees of nursing homes. The long "waiting list" which has been for many years past a source of much concern to the medical staff will, it is confidently anticipated, soon be eliminated. Contributions are greatly needed, and will be thankfully received by the hon. treasurer or the secretary at Arthur-street, at the Chelsea Hospital for Women.

Medical News.

UNIVERSITY OF CAMBRIDGE: *Diploma in Psychological Medicine.*—A course of instruction covering the material necessary for the psychiatrical portion of the examinations in Part II. of the Diploma in Psychological Medicine will be held in the psychological laboratory of the University and in the Fulbourn Mental Hospital on Tuesdays and Fridays of the Lent Term, 1925, from Jan. 16th to March 10th inclusive. Those wishing to take this course should communicate not later than Dec. 31st next with the secretary, Committee in Psychological Medicine, Psychological Laboratory, Cambridge, from whom further particulars may be obtained.

UNIVERSITY OF LONDON.—At a recent meeting of the Senate the following were constituted the Boards of Examiners acting with the External Examiners for the First and Second Examinations for Medical Degrees in 1925, the examiners whose names are marked with an asterisk being appointed chairmen of their respective boards:—

Inorganic Chemistry: *Mr. J. A. Gardner (St. George's Hosp. Med. Sch. and Lond. Sch. Med. Women) and Prof. C. S. Gibson (Guy's Hosp. Med. Sch.). General Biology: Dr. Doris L. MacKinnon (King's Coll.) and Dr. E. J. Salisbury (Univ. Coll.). Physics: *Mr. J. H. Brinkworth (St. Thomas's Hosp. Med. Sch.) and Mr. B. L. Worsnop (King's Coll.). Organic Chemistry: *Mr. J. A. Gardner (St. George's Hosp. Med. Sch. and Lond. Sch. Med. Women) and Prof. J. C. Drummond (Univ. Coll.). Anatomy: *Prof. E. Barclay-Smith (King's Coll.) and Prof. F. G. Parsons (St. Thomas's Hosp. Med. Sch.). Physiology: *Prof. H. E. Roaf (London Hosp. Med. Coll.) and Prof. Swale Vincent (Middlesex Hosp. Med. Sch.). Pharmacology: Dr. O. F. F. Leyton (Lond. Hosp. Med. Coll.) and Dr. O. Inchley (King's Coll.), and *Prof. A. J. Clark.

The following were appointed Associate Examiners for the M.B., B.S. Examinations in 1925:—

Medicine: Prof. F. R. Fraser, Prof. F. S. Langmead, Prof. H. MacLean, and Dr. Gordon M. Holmes. Surgery: Mr. H. S. Souttar, Mr. C. H. S. Frankau, Mr. E. D. Telford, and Prof. C. A. Pannett. Obstetric Medicine: Mr. M. H. Phillips and Prof. Louise McIlroy. Pathology: Prof. S. MacDonald and Prof. E. H. Kettle.

Dr. Joseph Bamforth was recognised as a teacher of Bacteriology at St. Thomas's Hospital Medical School.—Dr. F. L. Hopwood, D.Sc. Lond., was appointed as from Oct. 1st, 1924, to the University Chair of Physics, tenable at St. Bartholomew's Hospital Medical College.—The title of Reader in the University was conferred on Dr. R. J. Gladstone in respect of the post held by him at King's College.—It was resolved to institute, in accordance with the regulations on University titles, a University Chair of Pathology tenable at the London School of Medicine for Women.

TORONTO UNIVERSITY AWARD.—The Council of the Faculty of Medicine of the University of Toronto have awarded the Charles Mickle Fellowship of the University to Sir James Mackenzie, M.D., LL.D., F.R.S., Honorary Physician to the King in Scotland. The Fellowship, which is of the value of approximately 1500 dollars, is awarded annually to that member of the medical profession who is considered by the Council to have done most during the preceding ten years to advance sound knowledge of a practical kind in medical art or science.

AN EMPIRE FOOD COUNCIL.—A conference will be held in the new year, by consent of the Royal Colonial Institute, in their council room to inaugurate an Empire Food Council, organised to encourage the consumption in the United Kingdom of the food products of the overseas part of the Empire and of Great Britain herself; to spread general information about food; and to arrange a British Empire bread campaign to popularise bread made from wheat grown in Great Britain and the Dominions and ground in Great Britain and Ireland. The chair will be taken by Prof. H. R. Kenwood, supported by Lord Bledisloe, Sir Arthur Crosfield, Sir Harry Baldwin, Sir Arthur Mayo-Robson, Sir Frederick Mott, Major J. Elsdale Molson, Dr. Nathan Raw, and Dr. C. W. Saleeby. Representatives will attend from the Australian Commonwealth (commercial department), the Canadian Chamber of Commerce, the British Empire League, the British Empire Producers' Organisation, the British Empire Union, the Empire Development Union, the Overseas Farmers Coöperative Federations, the Bread and Food Reform League, the Food Education Society, the People's League of Health. Further information can be obtained from Miss May Yates, hon. secretary, Bread and Food Reform League, 37, Essex-street, London, W.C. 2.

METROPOLITAN ASYLUMS BOARD.—Courses of instruction for medical graduates and students will be held under the Board from January to March as follows:—*Hospital Administration* (for the Diploma in Public Health).—A three months' course of lectures and demonstrations at the North-Western Hospital, Lawn-road, Hampstead, N.W. 3, by Dr. E. W. Goodall, medical superintendent, on Mondays and Thursdays at 4.30 P.M., and alternate Saturdays at 10.30 A.M., beginning Monday, Jan. 5th.

Diagnosis and Treatment of Fevers.—During January next courses will be held at various hospitals under the Board. Dr. F. M. Turner, medical superintendent of the South-Eastern Hospital, Avonley-road, Old Kent-road, S.E., will give a two months' course at that hospital on Tuesdays and Fridays at 11 A.M., beginning Tuesday, Feb. 3rd. Further particulars may be obtained from the Clerk to the Metropolitan Asylums Board, Victoria Embankment, E.C. 4.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—The Fellowship of Medicine programme of special courses for the month of January includes various specialties as well as a two weeks' intensive course from Jan. 12th to 24th at the London Temperance Hospital. The programme will cover the whole day and will include all the general and special departments of the hospital in addition to a special lecture at 4.30 P.M., to which members of the medical profession are invited. Bethlem Royal Hospital, the Royal Westminster Ophthalmic Hospital, and the North-Western Fever Hospital will be coöperating with the London Temperance Hospital. An intensive course will also be held in cardiology at the National Hospital for Diseases of the Heart from Jan. 12th to 23rd; a series of lecture-demonstrations on the treatment of common nervous diseases will be given at the West End Hospital for Nervous Diseases in the out-patient department, 73, Welbeck-street, W., from Jan. 5th to 31st; a two weeks' course in ophthalmology at the Royal Eye Hospital from Jan. 5th to 17th, comprising clinical cases, followed by a lecture on the more important diseases of the eye; eight lecture-demonstrations in psychological medicine at Bethlem Royal Hospital, and a four weeks' course in urology at St. Peter's Hospital from Jan. 12th to Feb. 7th. Copies of the syllabus of each of the above-mentioned courses, together with the list of special courses arranged up to June, 1925, may be obtained on application to the secretary to the Fellowship of Medicine, 1, Wimpole-street, W. 1. Arrangements are being made for a series of Fellowship lectures to be delivered at the House of the Royal Society of Medicine.

POST-GRADUATE ENTENTE BETWEEN AMERICA AND ENGLAND.—The Inter-State Post-Graduate Assembly of America, directed by the State District Medical Association of that country, is visiting the British Islands during the first three weeks of June, 1925, in order to hold the annual congress of the Association, under the presidency of Dr. W. J. Mayo. The itinerary includes, as well as London, Edinburgh and Dublin, Leeds, Liverpool, Manchester, and Newcastle, Belfast and Glasgow. An advisory committee has been formed to organise the reception of the visitors in London, consisting of Sir Humphry Rolleston, Sir William Hale-White, Sir StClair Thomson, and Mr. H. J. Waring, while the arrangements in the provincial cities will be in the hands of Sir Robert Jones, Sir Berkeley Moynihan, Mr. Grey Turner, Sir William Milligan, Sir Harold Stiles, and Sir William Wheeler. Prof. Tuffier will make the preparations for a visit to Paris later. The arrangements of the professional and social programme of the tour has been placed in the hands of Mr. Philip Franklin, who gave a dinner at Claridge's Hotel last week to enable the American Ambassador to meet some of those interested in the movement. The guests included, as well as the advisory committee and the Presidents of the Royal Colleges, the American Consul-General; Lord Desborough, President of the Pilgrims Society; Lord Dawson; Prof. C. M. Gayley, Director of the American University Union in Europe; Mr. Wilson Cross, President of the American Society in London; Mr. F. E. Powell, President of the American Chamber of Commerce; Sir Squire Sprigge, Editor of THE LANCET; Mr. Donald Armour, representing Canada; Dr. R. A. Bolam, Sir D'Arcy Power, Sir Arbuthnot Lane; Mr. Robert Grant, jun., of the American Red Cross; and Dr. Arthur Ellis, Mr. Girling Ball, Mr. H. W. Carson, and Dr. Eric Pritchard, the honorary secretaries of the programme committee. There were no formal speeches on this occasion, but after a welcome from the American Ambassador, Sir Humphry Rolleston and Sir John Bland-Sutton spoke of the interest that would be felt by the Colleges, and Sir StClair Thomson, President of the Royal Society of Medicine, invited the visitors to use two of the lecture rooms in the Society's house during the necessary days—namely, from June 1st to 6th. Other speakers, advocating the practical need of entente, were Mr. Waring, Mr. Powell, Mr. Armour, and Sir Squire Sprigge.

ROYAL INSTITUTION OF GREAT BRITAIN.—The juvenile Christmas lectures will be delivered at 3 P.M. on Dec. 27th and 30th, 1924, and Jan. 1st, 3rd, 6th, and 8th, 1925. They will be given by Mr. Frank Balfour Browne, lecturer on entomology in the University of Cambridge, under the general title Concerning the Habits of Insects. The subject will be divided among the six lectures as follows: (1) Insect Collecting and What It Leads to; (2) Habits of Bees and Wasps; (3) Habits of Caterpillars; (4) Habits of the Dragon-fly; (5) Habits of the Water-beetle; and (6) Habits of Insects and the Work of Man.

BETHLEM ROYAL HOSPITAL.—The spring course of study for the Diploma in Psychological Medicine of the various universities will commence at the hospital on Jan. 5th, 1925. The course consists of lectures and demonstrations in (*a*) the anatomy, histology, and physiology of the nervous system; (*b*) psychology; (*c*) neurology; (*d*) psychological medicine; and (*e*) mental deficiency. A full syllabus of the course, together with a list of the lectures, may be obtained from the physician-superintendent at the hospital, London, S.E. 1.

PRESENTATION TO DR. H. CAMPBELL THOMSON.—Following the recent retirement of Dr. H. Campbell Thomson from the staff of the Middlesex Hospital, his colleagues and old fellow students entertained him to dinner at Oddenino's Restaurant on Dec. 3rd. Eighty-nine sat down to dinner, and Dr. Campbell Thomson was presented with a pair of prismatic field glasses, and a George III. silver tankard, on a base suitably inscribed, as a memento of the occasion and a mark of affection and appreciation.

NEW CHILDREN'S HOSPITAL FOR KENSINGTON.—On Dec. 3rd, in the Kensington Town Hall, the Mayor of Kensington, Alderman Archibald Allen, presided over a meeting in support of the proposed Princess Louise Hospital for Children in North Kensington. The hospital is intended to replace the 11 cots at the Children's Hospital in Church-street, and an appeal is being made for £80,000. Lord Balfour of Burleigh, the hon. treasurer of the building fund, stated at the meeting that Princess Louise had intimated her intention of giving £1000, the Mayor of Kensington had subscribed £500, and an anonymous donor through Mr. Percy Gates, M.P., had promised £500 if nine others gave a similar amount each. Sir Henry Seymour King has promised to be one of the nine.

PRESENTATION TO DR. E. W. HOPE.—Dr. Hope, who recently retired from the post of medical officer of health for Liverpool after 41 years' service, was on Nov. 25th entertained at luncheon at the Exchange Station Hotel, Liverpool, by the members of the city council, and presented with an illuminated address and a handsome antique silver tray and tankard. Sir Archibald Salvidge presided, and there was a large and representative gathering, including the Lord Mayor and Lady Mayoress. Since his retirement Dr. Hope has been the recipient of expressions of friendship from many of those with whom he has been associated, including his colleagues and staff, the Medical Institution, the Mersey Docks and Harbour Board, the Liverpool Steamship Owners' Association, and the Midwives' and Welfare Associations.

CHRISTIE HOSPITAL AND CANCER IN MANCHESTER.—At the recent annual meeting of the hospital board it was stated that the number of patients treated during the past 12 months was 482, and was a record. Of the 423 new in-patients 125 were inhabitants of Manchester, and the remaining 280 came from many parts of the North of England as far away as Penrith and Newcastle-on-Tyne; 302 suffered from cancers and tumours, and 121 from pre-cancerous conditions or chronic ulcerations. Of the 448 in-patients, 358 had been discharged, 72 had died, and 18 remained in hospital. During the year the hospital had provided a permanent abode for 76 patients who could not properly be treated at home owing to the grave character of their ailment, having been admitted at a late stage of the disease. The chairman of the medical board said that there was a definite increase in the number of apparent cures, and methods of alleviation had increased so considerably that patients could be made fit for treatment at home where formerly they had to be kept in hospital. Fewer patients died to-day from the primary form of cancer owing to the radium, X ray, and operative treatment now available, and the secondary form, which was internal, not external, was, as a rule, not so foul or painful. Prof. R. B. Wild welcomed the interest shown by the public in cancer research. We knew, he said, a great deal more about cancer than about some of the more common diseases. This year the committee had offered a prize of £300 for the best essay on the ætiology of cancer, based on original observations or experimental work. Their object was to find one or more men suitable for carrying on the work of research.

BURY INFIRMARY.—A new children's ward has been added to the Bury Infirmary at a cost for erection and equipment of £12,000 and with an endowment of £30,000. This ward represents the principal of two schemes in the town's war memorial, the other being a cross in the centre of the town. The total sum subscribed was £46,300, of which sum Lord Derby and Lord Stanley jointly gave £5000 and Lord Doverdale, a native of Bury, £1000.

SOCIETY OF APOTHECARIES OF LONDON.—A Livery dinner of the Society was held on Dec. 9th, the Master, Dr. Algernon Brenchley, presiding, supported by the Junior Warden, Dr. Alfred Hepburn, and the Deputy Senior Warden, Mr. Samuel Osborn. The toast of The Combatant Forces, proposed by Mr. Osborn, was responded to by Surgeon Vice-Admiral J. Chambers and Lieut.-General Sir William Leishman; and that of the Royal Colleges and Universities, proposed by the Master, by Sir Humphry Rolleston and Dr. E. Graham Little, M.P. The toast of The Guests was responded to by the Rt. Hon. Sir Henry Craik and Mr. Walter G. Bell, whose literary and archæological interest in the history of London was well displayed in his words. Among those invited were Sir George Makins, Sir George Buchanan, Sir Arbuthnot Lane, Sir Ronald Ross, Dr. de Havilland Hall, Mr. Malcolm Hepburn, and Sir Squire Sprigge. A good musical programme was interspersed with the speeches.

ST. GEORGE'S HOSPITAL: NEW OUT-PATIENT DEPARTMENT.—The new department at St. George's Hospital, London, which has been constructed and equipped at a cost of some £16,000, was formally opened by Sir Humphry Rolleston, the President of the Royal College of Physicians, on Dec. 5th, when he also unveiled a bronze bust of John Hunter which has been mounted over the gateway in Knightsbridge. The bust formerly adorned the board room of the hospital. In opening the new department Sir Humphry Rolleston said that besides providing relief to the sick poor the out-patient department was important as a centre for consultation with general and panel practitioners who could thus obtain an opinion by letter. Some 60 per cent. of the patients were sent to the hospital with that object. The out-patient, also, was in the position to benefit from the highest form of medicine, the ideal of the prevention of disease. Lord Maidstone, the hon. treasurer, referring to the financial struggle which the hospital was making to maintain itself, said that the method of meeting the annual deficit of £20,000 by encroaching on capital could not continue indefinitely. In the new department provision has been made for the different sections—medical, surgical, gynæcological, ophthalmic, and throat, ear, and nose. The buildings are of the most modern type. In the ophthalmic section five special dark-rooms for eye-testing have been made under the road.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Opening of the Session.—The King's Speech.

PARLIAMENT was opened in State by the King on Dec. 9th. In the course of the Speech from the Throne it was stated that a Bill was under consideration for safeguarding employment in efficient industries where, after inquiry, the need for such exceptional action was established. His Majesty's Ministers were deeply impressed by the continued shortage of housing accommodation. Private builders would be encouraged and the Government would devote their attention to overcoming the rising cost of houses and the shortage in the available supplies of labour. New methods of construction would also be encouraged. Something was already being done under existing legislation to clear the worst areas and to remedy sanitary and structural defects in those which remain. As new building increased it would be possible largely to develop this process and the Government would take every opportunity of pressing it forward with vigour. The Government were engaged upon inquiries into the possibility of combining with existing systems of insurance provisions for improved old age pensions and pensions for widowed mothers. Steps would be taken to carry out the principal recommendations of the Committee on the use of preservatives and colouring matter in food, and for the ascertainment of costs and profits in the distribution of milk.

HOUSE OF COMMONS.

TUESDAY, DEC. 9TH.

The Debate on the Address.

IN the course of the debate on the Address in reply to the King's Speech, Lieut.-Colonel FREMANTLE said that the death-rate from tuberculosis had been reduced by one-half in the last 30 or 40 years, and if the other half could be removed, the nation would save £90,000,000 of the national income and about £5,000,000 to the Exchequer annually. A Milk Bill to deal with tuberculous milk was passed at the beginning of the late war, but was never enforced. The time had come when it should be re-enacted.

Referring to the housing question, Colonel Fremantle said the essential thing was to see to the distribution of the houses built. House-building was at present being carried on to a certain extent under town-planning schemes. But town-planning schemes had lagged behind since 1909, when that great ideal was first established. An Act was brought in in 1919 to make the adoption of town-planning schemes compulsory, but the schemes so far referred only to areas that were to be built up. He hoped to see the pace increased and that they would insist that all areas should get town-planning schemes prepared very soon. In addition, they needed new legislation to enable them to complete town-planning by applying it to already built-up areas. All who had had experience in the large municipalities recognised how difficult it was to deal with the large areas where slums were being pulled down, or were to be pulled down with the intention of building up again. There were no powers for town planning in such cases. The need of a Bill to enable town planning to be adopted for areas already built up was urgent. The replacement of old houses should be done on proper lines. The authorities should have power to take over sufficiently large areas and to reconstruct them, not simply to improve streets where they were, but to make a change on a much larger scale. This procedure would have to be brought into relation with the traffic problem, which was only at the beginning of its difficulties. It was owing to the traffic problem that the attention of the public had been directed to the fact that it was necessary to get people out of London. They could not do that with a population congested as it was now. It could be done with improved prosperity and an enormous increase of motor-cars, as in other towns abroad. The two questions must be dealt with together. The problem could be solved only on the principle of the "satellite" city—the principle of the garden city which had already been tried at Letchworth and Welwyn. He hoped that the larger scheme he had suggested might find a part in the Government programme.

There were certain other health services which he hoped that the Government would be able to help. They had been told that a Factories Bill, a consolidating and amending measure, was to be brought in. The Bill introduced in the last Parliament was a very mixed Bill and from the health point of view it was sadly lacking, especially in organisation. It was retrogressive and reactionary in one sense. It took a large measure of local administration out of the hands of the local sanitary authorities and brought it back to Whitehall. It made no arrangement for a proper medical and health department in Whitehall, and it showed no understanding of the necessity of linking up health in the factories with the general health system of the country under the Ministry of Health. Some such system must be devised and carried through in the near future. There were several Ministries of Health now in existence. The Factory Department at the Home Office was almost a Ministry of Health in itself. Health problems under the Board of Education almost demanded a ministry in themselves. The Ministry of Health was the third. There were also large health departments in most of the other Government departments. Yet there was no scheme for linking these things together. It was puerile and absurd to go on in this way. They must have a proper staff arrangement to get them linked up together, with a common policy for working together instead of working as now, in separate compartments.

Other things ripe for solution were being inquired into by Royal Commission or Committee. In the case of the Royal Commission on the Insurance Acts he hoped that the medical profession would make a very great contribution to the inquiry in order to get a national solution of the problem of panel treatment. Then there was the Royal Commission on London Government. He hoped that they would get the problems of London government finally settled, especially with a view to a proper settlement of the health services. Unfortunately, the position of the medical service in India was such that young medical men were being frightened from giving their services to India as so many magnificent men did in the past. What was the attitude of the Government towards the Lee Commission with regard to the medical services in India? If it was proposed to abolish the medical service and to provincialise it the result would be that they would not get men for this essential and humane work in India. The Royal Army Medical Corps was in a most perilous position. Recruits could not be obtained. The same remark applied to the Colonial Medical Services. These questions should be looked at by the Government, not in a piecemeal way, but as part of a definite health policy which would have regard to all the different factors.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Tuesday, Dec. 16th.

GENERAL MEETING OF FELLOWS: at 5.30 P.M.

Wednesday, Dec. 17th.

HISTORY OF MEDICINE: at 5 P.M.
Mr. F. C. Pybus: (1) The Newcastle Barber Surgeons Company: (2) A New Harvey Manuscript in His Own Copy of the "Degeneratione."
Mr. Walter G. Spencer: Exhibit from the Library of 18th Century Anatomical Mezzotints by Jacques Gautier d'Agoty.

Thursday, Dec. 18th.

DERMATOLOGY: at 5 P.M. (Cases at 4 P.M.)
Cases and Specimens:
Dr. Aldo Castellani: Exhibition of Tropical Specimens.
Dr. A. C. Roxburgh: Schamberg's Disease.
Other cases will be shown.

Friday, Dec. 19th.

ELECTRO-THERAPEUTICS: at 8.30 P.M.
A series of short papers and demonstrations will be given by Dr. Friel, Dr. Teall, Dr. Meyrick-Jones, and others.

HUNTERIAN SOCIETY.
MONDAY, Dec. 15th.—7.30 P.M., Dinner at Simpson's Restaurant, 2 and 3, Bird-in-Hand Court, Cheapside, Discussion on Headache, by Dr. C. O. Hawthorne, Mr. W. Trotter, Dr. Bernard Hart, and Dr. H. Fielding Briggs.

TUBERCULOSIS SOCIETY.
FRIDAY, Dec. 19th.—8 P.M. (at the house of the Society of Medical Officers of Health, 1, Upper Montague-street, Russell-square), Dr. F. G. Chandler: Tuberculous Peritonitis.

CHELSEA CLINICAL SOCIETY.
TUESDAY, Dec. 16th.—8.30 P.M. (at the Club Room, St. George's Hospital, entrance in Knightsbridge). A Discussion on Some Diseases Common to Adolescence will be opened by Dr. Theodore Thompson and Mr. Ivor Back.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn-fields, W.C.
MONDAY, Dec. 15th.—4 P.M., Mr. F. W. Twort (Superintendent of the Brown Institution): Lectures on Modern Bacteriological Technique.
TUESDAY.—4 P.M.
WEDNESDAY.—4 P.M.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, Dec. 15th.—12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Mr. Addison: Surgical Wards. 2 P.M., Mr. Bishop Harman: Eye Dept.
TUESDAY.—11 A.M., Dr. McDougal: Electrical Dept. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY.—12.15 P.M., Dr. Burnford: Medical Pathology. 2 P.M., Dr. Owen: Medical Out-patients. 2.30 P.M., Mr. Donald Armour: Surgical Wards.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 12 noon, Dr. Scott Pinchin: Diseases of the Heart. 2 P.M., Mr. MacDonald: Genito-Urinary Dept.
FRIDAY.—10.30 A.M., Dr. Pritchard: Medical Wards. 12 noon, Surgical Registrar: Surgical Pathology. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Dept.
SATURDAY.—9.30 A.M., Dr. Burnford: Bacterial Therapy. 10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily, 10 A.M. to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

LONDON HOSPITAL MEDICAL COLLEGE, Turner-street Mile End, E.
WEDNESDAY, Dec. 17th.—4.15 P.M., Sir Arthur Keith: The Clinical Importance of the Bulbus Cordis (Schorstein Memorial Lecture).

ST. JOHN'S HOSPITAL, 49, Leicester-square, W.C.
TUESDAY, Dec. 16th.—5 P.M., Dr. Graham Little, M.P.: The Keratoses. General View.

ROYAL DENTAL HOSPITAL OF LONDON POST-GRADUATE LECTURES.
WEDNESDAY, Dec. 17th.—5 P.M., Mr. F. St. J. Steadman: The Technique of Some Surgical Operations about the Mouth.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE LECTURES.
TUESDAY, Dec. 16th.—4.15 P.M., Dr. A. E. Barclay: X Ray Treatment of Hyper-thyroidism.
FRIDAY.—Dr. D. E. Core: Early Mental Disease, its Differentiation and Prognosis.

UNIVERSITY OF SHEFFIELD POST-GRADUATE LECTURES. (At 3.30 P.M.)
TUESDAY, Dec. 16th.—(At the Children's Hospital.) Dr. John Stokes: Rheumatism in Childhood.
FRIDAY.—(At the Royal Infirmary.) Injuries of the Knee-joint, &c.

ST. ANDREWS INSTITUTE FOR CLINICAL RESEARCH.
TUESDAY, Dec. 16th.—4 P.M., Dr. Maclennan: Pathology of the Kidney.

Appointments.

CARRUTHERS, A. A., M.B., Ch.B. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Shilton District of Warwick.
DALEY, W. A., M.D., B.S. Lond., M.B., Ch.B. Liverp., D.P.H., Medical Officer of Health for the City of Hull.
HIGGINS, J. B., M.B., Ch.B. Manch., Honorary Radiologist at Buxton Cottage Hospital.

Vacancies.

For further information refer to the advertisement columns.
Adelaide University.—Marks Lectureship in Applied Physiology and Sheridan Fellowship. £750.
All Saints' Hospital for Genito-Urinary Diseases, Vauxhall Bridge-road, S.W.—Res. Sen. H.S. at rate of £200. Also Jun. H.S. at rate of £100.
Birmingham City Fever Hospital, Lodge-road.—Asst. M.O. £400.
Blackburn and East Lancashire Royal Infirmary.—3rd H.S. £150.
Bradford City.—Sen. Dent. O. £650. Also Asst. Sch. Dentist. £450 and bonus.
Brighton, Poor-law Institution and Infirmary, &c.—M.O. £800.
Bristol Royal Infirmary.—Hon. Reg. to Ear, Nose, and Throat Dept.
Cambridge, Addenbrooke's Hospital.—Cas. O. and Res. Anæsthetist at rate of £130.
Chelsea Hospital for Women, Arthur-street, Chelsea, S.W.—S.
Derbyshire Royal Infirmary.—Hon. Asst. S.
Dumfries and Galloway Royal Infirmary.—Jun. R.M.O. £125.
East Sussex County Mental Hospital, Hellingly, Sussex.—Pathologist. £400.
Edmonton Education Committee.—Asst. Sch. M.O. £600.
Exminster, Devon Mental Hospital.—Jun. A.M.O. £300.
Johannesburg, South African Inst. for Med. Research.—Plague Bacteriologist. £1500.
Malayan Medical Service.—Medical and Health Officers. See advt. for salaries.
Manchester Royal Infirmary.—2nd Surg. Reg. £150.
Merthyr General Hospital, Merthyr Tydfil.—Res. H.S. at rate of £100.
Preston Royal Infirmary.—Jun. H.S. £175.
Queen Mary's Hospital, Stratford, E.—Hon. Asst. P. Also Clin. Asst. to Throat, Nose, and Ear Dept.
Royal Army Medical Corps.—Commissions.
Royal Masonic Institution for Girls, Clapham Junction.—M.O. £350.
Royal Waterloo Hospital for Children and Women, Waterloo-road, S.E.—Cas. O. £150.
St. Bartholomew's Hospital.—Assts. to the Surg. and Med. Professional Units.
St. Mary's Hospital, W.—Med. Reg. £200. Med. Supt. £400.
St. Pancras Dispensary, 39, Oakley-square, N.W.—Hon. P. and Hon. Ophth. S.
Southampton County Borough.—2nd School Dentist. £450.
Southampton, Royal South Hants and Southampton Hospital.—Sen. H.S. £200.
South Shields, Ingham Infirmary.—Sen. H.S. £200.
Stroud General Hospital.—H.S. £120 to £150.
Weir Hospital, Grove-road, Balham, S.W.—Hon. Visiting Phys.
West Bromwich and District Hospital.—Res. Asst. H.S. £180.
West Ham County Borough.—Tuberculosis O. £900.
West London Hospital, Hammersmith-road, W.—H.P., H.S., Aural H.S. and Res. Cas. O. Each at rate of £100.

The Chief Inspector of Factories, Home Office, London, S.W., announces the following vacant appointments: Portishead, Somerset, and Ellesmere Port, Cheshire.

Births, Marriages, and Deaths.

BIRTHS.

WOODROFFE.—On Dec. 5th, at "Oakvale," Sheffield, the wife of Dr. G. C. L. Woodroffe, of a son.

MARRIAGES.

MCCARTHY—BONE.—On Dec. 5th, at St. Hilary's Church, Llanrhos, Llandudno, Herbert John McCarthy, M.R.C.S., L.R.C.P., to Cicely Bessie, youngest daughter of Mr. and Mrs. Ernest E. Bone, Rocknest, Llandudno.

DEATHS.

COMPSTON.—On Dec. 2nd, at Ashley-gardens, S.W., after a long and painful illness (contracted on war service in Mesopotamia), Captain George Dean Compston, B.A. Camb., M.R.C.S., L.R.C.P.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

THE PRESENT POSITION OF INSULIN THERAPY.*

BY GEORGE GRAHAM, M.D., F.R.C.P.LOND.,
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IN opening a discussion on the present position of the treatment of diabetes with insulin it is unnecessary to speak in detail about some aspects which had to be considered a year ago, and I would rather discuss the principles which are controlling its use. Everyone will agree that while insulin is invaluable in the treatment of diabetes it cannot be called a cure. The points which I would like to consider are these:—(1) The aims of treatment with insulin. (2) The type of case which should be treated with insulin. (3) The best type of diet. (4) The value of insulin in the treatment of coma. (5) The value of insulin in the treatment of other infections and minor complications.

The Aims of Treatment.

One of the chief difficulties in deciding these points is the improvement which takes place in the clinical condition of the patients on all varieties of treatment with insulin. The patients nearly always feel so much better that it is difficult to say which is the correct line of treatment, and another five years may have to pass before some of these questions can be answered with certainty. Before the introduction of insulin it was accepted that the patient's diet should be so adjusted that the urine did not contain any sugar, and that the fasting value of the blood-sugar was within the normal limits of 0·08 to 0·12 or 0·13 per cent. In order to achieve this it was necessary in severe cases to give a diet of very low caloric value, and the patients were all much under the normal weight. When insulin was available the natural thought of most workers was that the patient need no longer be undernourished. The carbohydrate was increased so that at some time of the day the blood-sugar was raised above the normal level and sugar was excreted in the urine. Of the eight groups of workers in Canada and the United States who took part in the early study of insulin only two, the Toronto school (Banting, Campbell, and Fletcher) and Allen's school, aimed at keeping the fasting value of the blood-sugar within normal limits; one, Joslin, tried to keep the urine sugar-free; but the other five all thought that it was unnecessary to keep the urine sugar-free at all hours of the day. In this country the early workers, Poulton, Spriggs, and myself, urged that the ideal of treatment was to keep the urine sugar-free and the level of the blood-sugar within the normal limits 0·08 and 0·13 per cent. This attitude was taken from the consideration of the hypothesis that diabetes is due to a degeneration or hydrops of the beta cells of the islands of Langerhans, and that it is essential that the surviving beta cells should not be overworked at any hour of the day or night. The evidence of overwork would be either the presence of sugar in the urine or a blood-sugar above the fasting value of 0·13 per cent. I think that it is now generally admitted that this practice is correct since it is physiological, although it is not always easy to carry out. So far I have encountered only one patient in whom it proved impossible to maintain the fasting blood-sugar within normal limits some 12 hours after the last dose of insulin.

Another ideal in treatment is that the urine should not contain any acetone bodies. In order to attain this there must be a correct balance between the ketogenic and anti-ketogenic substances in the diet. This is an ideal which I have not aimed at. I have been content provided that the nitroprusside test for aceto-acetic acid in the urine has not been intense. The usual amount of aceto-acetic acid which patients who are doing well excrete is about 1 g. calculated as acetone. There is one practical advantage in allowing a little ketosis, since if the urine contains no aceto-acetic acid the patient has certainly been adding some carbohydrate to the diet. Although I am not convinced that this small amount of ketosis does any harm, I will admit that it is wrong on physiological grounds, and that it would be better to increase the carbohydrate ration by 5 or 10 g. in order to prevent this ketosis.

The ideal before the discovery of insulin was that the patient should be definitely under weight. I still think that this is the right aim, but that it is sufficient if the patient is about 5 per cent. below the normal weight instead of the 15 to 20 per cent. which was common before. Further, the weight curve should be the guide to the total caloric value of the diet and should determine whether it should be increased or decreased. In children there should be a slow increase. This is necessary as the children have to grow, but they should never be allowed to become fat, and should always be underweight.

Indications for Insulin Therapy.

When insulin was first introduced it was said that if patients could take a reasonable amount of food, say 50 g. of carbohydrate and an adequate caloric value, without passing sugar, it was unnecessary to give them insulin. This view is still held by some, but I have never accepted it. The improvement which occurs in the clinical condition after a small dose of insulin, 5, 10, or 15 units, is very striking. The patient gains weight and feels capable of doing work, even if no change is made in the diet. This is also Joslin's view, and it would seem as if insulin helped with some other process besides the sugar metabolism, although there is no other proof of this at present.

Insulin has been used in the treatment of the young adult who has had an acute attack of the disease and has come under observation a short while after the onset of symptoms. The sad experience of these cases before the introduction of insulin was that this type of patient responded well to dietetic treatment, but after one to two years began to lose tolerance in spite of all restrictions. The average duration of life of this type of patient for the age-period 20 to 40 was only 5·3 years (Joslin). It therefore seemed justifiable to treat these patients with insulin early in the disease in order to try to prevent the fall in sugar tolerance and perhaps cause a definite rise in sugar tolerance. If small amounts of carbohydrate are given together with sufficient insulin to deal with this sugar the work of the beta cells will be reduced to a minimum. I have been watching six patients and testing the sugar tolerance at intervals by means of a dose of sugar. The actual amount of carbohydrate varies, as four patients are taking 16 to 20 g., one 30 g., and one 60 g. The dose of insulin also varies from 8 to 15 units. It is usually given in one dose, but two patients take it in two doses.

The blood-sugar curves after a dose of 50 g. show that the change in tolerance which has taken place has been very slight, but what change there is, is in favour of an improvement. It is too early to say much about these patients as it will be another four years before they reach the average of their class. Still it may prove a hopeful line of research.

The Best Type of Diet.

The next important question is the nature of the diet which should be used. Everyone acknowledges that the composition of the diet is just as important as before the introduction of insulin, and in fact more attention is paid to it. There is little dispute over the amount of protein, and the usual amount varies from 2/3 g. to 1 g. per kilo of body-weight. But the amount of carbohydrate varies from 16 or 20 g. to 50, 80, 100, or even 200 g. for the same type of case. The dose of insulin varies enormously under these conditions. For more than three years I have felt that a patient who had a definite attack of true diabetes should never take more than a minimal amount of carbohydrate in order to lighten as much as possible the work of the beta cells of the islands of Langerhans. Such a patient has probably lost at least half and perhaps three-quarters of the beta cells (judging by Allen's dog experiments), and has lost the greater part of his reserve power for dealing with carbohydrates. Till now I have usually restricted the carbohydrate to 16 or 20 g. of sugar in the form of vegetables or fruit, but I think that the better figure may be 25 to 30 g. The objection to giving amounts like 50 or 80 g. of carbohydrate are these: (1) The dose of insulin must be larger and the time chosen for the injection must bear a definite relation to the carbohydrate meal. Opinions differ as to the best time to give the injection, some favouring 30 minutes and others 60 minutes. Having to take the insulin a definite time before the meal makes the use of insulin still more of a nuisance. If the amount of carbohydrate is restricted to a minimum there is no need to be so careful about the time of the injection. (2) The relation of the insulin is not quite constant, but varies a little at times. Sometimes the patient may pass a little sugar and at other times he may be in danger of hypoglycæmia on a dose of insulin which is usually quite adequate. (3) Whether it is more of a temptation to the patient to add carbohydrate to the diet if he is taking some bread than when he takes none at all is arguable. I have the feeling that it is better for the patient to forget the taste of bread altogether than to be exposed to the temptation when he takes a fraction. It may prove easier to take none at all

* A paper, slightly abridged, opening a discussion on the Present Position of the Treatment of Diabetes by Insulin, read at the Medical Society of London on Dec. 8th.

of a pleasing food or drink than to take an unsatisfactory amount of it. Another danger of the high carbohydrate feeding arises from the large amount of insulin which is necessary. Should the insulin be stopped for any cause there is an immediate danger of coma in severe cases unless the food is at once reduced. Opinion is also divided on what should be the caloric value of the diet. This varies from 22 to 30 calories per kilo. This for a man of 10 st. 3 lb., or 65 kilos, would be 1400 to 2000 calories. I favour the low values as I have found that with them patients maintain their weight quite satisfactorily. One disadvantage of the high caloric diet is the necessity for an extra amount of fat which must be given to make up the caloric value, and this demands an extra amount of carbohydrate to prevent ketosis.

Effects of Insulin on Coma.

I have no space to say much about coma, though it is in this condition that the value of insulin is most striking. The dose must often be large, 100 units or more in the day, and it is wise to give at least 50 g. of sugar with it. It is advisable to make one or more estimations of the blood-sugar and to examine the urine every two or three hours, so as to avoid the danger of an overdose. The observation of patients in coma has shown that often some acute infection has occurred. Of nine cases at St. Bartholomew's Hospital in one year there was conclusive evidence in seven of such a complication—e.g., otitis media and gangrene of the lung. It follows that whenever a diabetic patient is found in coma a complete examination must be made, and repeated if necessary to exclude this possibility.

Insulin and Concurrent Disease.

The whole question of the effect of other diseases on the diabetic condition is of far-reaching importance. It is a common experience to find that the sugar tolerance is impaired by trivial ailments like colds in the head or an attack of diarrhœa, especially in children. Under these circumstances all these affections should be treated seriously, and the patient should be kept under close observation. The dose of insulin should be increased, and if it be possible, estimations of the blood-sugar should be made so as to ensure that the dose of insulin is adequate. If insulin is used to control the evil effects of the concurrent disease, and thus prevent the overwork of the beta cells which occurs when the blood-sugar is raised for long periods, it should prevent the fall of sugar tolerance.

In conclusion, insulin has enabled the patient to live longer and to enjoy this longer life. It will almost invariably resuscitate the comatose patient. The outstanding problem is the study of the means by which it may be used to prevent the progress of the disease.

A DISCLAIMER.

Dr. V. S. Hodson has brought to our notice that in a recently published book personal reference has been made to him, and his professional address has been added in a footnote. At the suggestion of the Registrar of the General Medical Council, Dr. Hodson desires to state in our columns that he had no knowledge that such information would be given, nor had he any idea that reference would be made to him in any shape or form.

MALARIA AND MOSQUITOES IN AUSTRALIA.

AT the close of the nineteenth century, when mosquitoes were first proved to be of great economic importance, very little was known concerning the habits of even the commonest species. At first very little attention was given to the aquatic stages of the insect, and the adult insects only were named with the inevitable redundancy of nomenclature, for since 1910 many species previously named have been found invalid. The second decade of this century has been a period of revision, a list of useless synonyms has been unravelled, numerous genera have been rearranged and included in one comprehensive genus, so that, at the present time, most of the systematic study of mosquitoes is concerned with synonyms. These circumstances have given rise to the preparation by Mr. L. E. Cooling of a handy list[1] of the principal *Culicidæ* of the Australian region.

He has also published an account of the larval stages and biology of the commoner species of Australian mosquitoes with the biology of *Aëdes perniciosus*, Edwards,[2] which, in conjunction with the work mentioned above, completes the record of information on Australian mosquitoes up to date. A more careful account of the morphology, breeding places, and habits of these insects could hardly be conceived. Further, Mr. Cooling has contributed a valuable appendix on the anopheline mosquitoes of North Australia and its tropical dependencies to a publication in the same series.

A third of Australia lies within the tropical zone, with the addition of Papua and the Mandated Territory of New Guinea. Before the advent of the white man tropical Australia was probably malaria-free, but it has since become infected. The endemicity of the disease, save in a few scattered areas, has not been of grave extent, but it is otherwise in Papua and New Guinea. In the space of 141 pages Dr. C. W. Cilento[3] has presented a concise and readable account of the ætiology of malaria, its clinical manifestations, diagnosis, and preventive measures written from the viewpoint of an Australian. All these pamphlets reflect credit on the institute, and are an index of the useful work being performed there.

[1] A Synonymic List of the More Important Species of *Culicidæ* of the Australian Region. By L. E. Cooling, Assistant Entomologist, Australian Institute of Tropical Medicine, Commonwealth of Australia. Department of Health Service Publication (Tropical Division), No. 2. Published under the authority of the Minister for Health.

[2] Service Publication (Tropical Division), No. 8.

[3] Malaria. With Special Reference to Australia and its Dependencies. By C. W. Cilento, M.D., B.S., D.T.M. and H., Director of the Australian Institute of Tropical Medicine. Service Publication (Tropical Division), No. 3.

THE ANTISEPTIC VALUE OF TOOTH PASTES.

THE literature of tooth pastes is as abundant as it is enthusiastic, but it is not always so accurate as it should be. It is claimed for many well-known tooth pastes, in no uncertain terms, that they possess powerful germicidal properties. These claims have been put to the test by two chemists, Mr. A. E. Parkes and Mr. A. E. Maddy (*Pharmaceutical Journal*, Nov. 8th, p. 563), who examined 12 of the best known brands of English and American make. The pastes were investigated for their antiseptic properties and the results were to show that in practically all cases the claims made by the makers are grossly exaggerated. Four of the samples had no antiseptic properties; even when the common germs of the mouth were left in contact with a mixture containing 25 per cent. of the tooth pastes for half an hour the organisms were not destroyed. It took from 15 minutes to half an hour for a 10 per cent. solution of the other eight samples to destroy the test organisms. As tooth paste usually remains in contact with the teeth for a few seconds only, it seems clear that the paste even in an undiluted state can have little, if any, effect upon the germs of the mouth. Manufacturers of disinfectants almost invariably sell their goods with a guarantee of germicidal strength compared with carbolic acid. The investigators suggest that manufacturers who recommend their tooth pastes for purposes other than cleaning the teeth should produce evidence of the value of their goods as disinfectants. The spread of disease might be encouraged by literature making claims for tooth pastes which give a feeling of false security to those who use them.

CZECHO-SLOVAKIAN ORNAMENT.[4]

THE employment of men injured in the war as broderers has become fairly common, and we have received a small portfolio, containing 45 original plates, comprising several hundreds of patterns from the entire territory of Czecho-Slovakia. They are in colours and in black and white, and many of them are very beautiful. The aim of the publication is to assert the claims of the Czecho-Slovakian races to these designs, and in a way, no doubt, these claims are just. Many of the motives are to be found in Persian, Turcoman, Egyptian, Cretan, and other Mediterranean embroideries and ceramics, but as employed in Bohemia and the adjoining provinces, where they have been modified and transmuted through many centuries, they emerge as characteristics of the countries and peoples now forming Czecho-Slovakia. For this reason it is to be regretted that the method of production of these plates should be so distinctly Viennese. Their coarseness of presentation is a real drawback, and we should have been able to recommend them as practically useful more easily had photogravure or some similar process been employed, whereby the details of actual use and treatment could have been studied. The charm of a design may depend entirely on its treatment. The Mediterranean countries possess many motives in common, and it is only the details of treatment which betray the nationality of the worker. Among these plates No. 27 shows a design so Persian in origin that far more detail of treatment is necessary before its claim to be a European pattern at all could be substantiated. How Spanish, too, is plate No. 44; but this probably can be explained by the tremendous Spanish influence exercised for so long in the Netherlands.

[4] National Ornament in Czecho-Slovak Schools. By Edward Welchet. Prague: B. Kočí. $3.